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STATISTICS

OF

COAL IN ILLINOIS

1885.

A SUPPLEMENTAL REPORT

OF THE

STATE BUREAU OF LABOR STATISTICS

CONTAINING THE ANNUAL

REPORTS OF MINE INSPECTORS.

JOHN S. LORD, SECRETARY.

SPRINGFIELD, ILL.:

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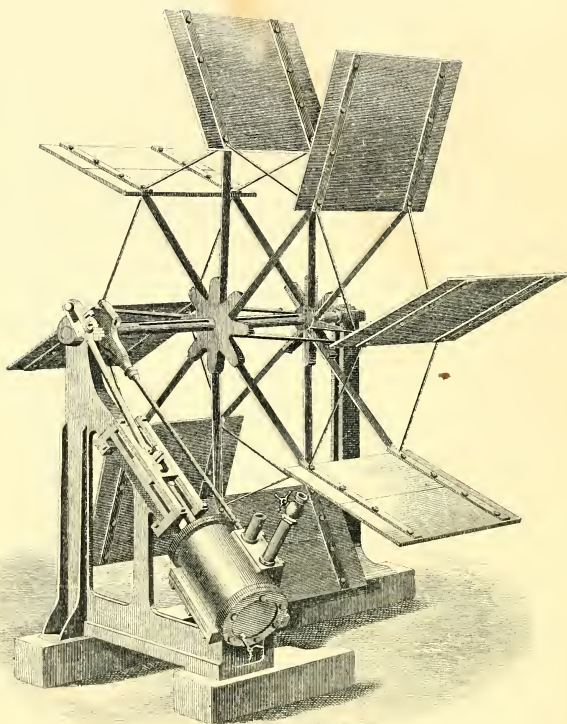
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FAN AND ENGINE, GEARED DIRECT, FOR VENTILATING MINES.

INTRODUCTION.

This is the fourth statistical summary of the coal mining industry of Illinois which has been published by this bureau, and as all serial work in statistics should be progressive, this report, as the result of the continuous efforts of the bureau, the efficiency of the mine inspectors, and the friendly coöperation of those interested, is somewhat more full than its predecessors.

Prominent consideration has always been given by this bureau to the mining interests and the mining people of the State, both because of their significance as elements in the industrial situation, and because no other industry in the State affords such varied illustrations and such frequent lessons on the relations existing between the employer and the employed.

In this matter, thanks to the wisdom of a late legislature, the bureau has been reinforced by the labors of an expert corps of inspectors of mines, whose duties not only afford them daily familiarity with the situation in the various coal fields, but also require them to make annual reports to this bureau of certain statistics relating to coal production, as well as of their action in enforcing the provisions of the mining laws.

Those reports for the year ending July 1, 1885, constitute the body of this supplemental report of the bureau, and present a detailed record of the extent and character of all the mining enterprises of the State.

Until this system was established, the facts in regard to this industry and of the army of workers engaged in it were merely a matter of conjecture. Now we know that over twenty-five thousand of the citizens of the State are dependent for wages upon the successful operation of our coal mines. This is more than twice the number employed in any one industry in the State. The amount of capital employed is nearly ten millions, an amount only exceeded

by the capital employed in three other industries, to-wit: flour milling, meat packing, and the manufacture of agricultural implements. The home value of the product of these mines is about twelve millions, of which seven and a half millions is distributed as wages for labor. But the importance of this industry cannot be measured or expressed by mere figures. Coal, the product of this capital and of this labor, is essential or most intimately related to all other industries. No product of labor creates more opportunities for labor, and no industry stimulates so many others, and at the same time is so dependent upon them. It is, in concrete form, motive power, light and heat, and as such the essence of all industrial activities.

If other justification were needed for the compiling and publication of exact information on a subject of common interest to so many of the people of the State, it would be found not only in the demand which has arisen for reports of this character, both among miners, mine owners and manufacturers, but in the opportunity which is thus afforded to suggest safe and scientific methods of mining, and at the same time promote relations of reciprocal amity between the capital and labor employed.

THE COAL TRADE.

It may be said of coal production in this State that the past has been a most trying year both to operators and men. In the face of a gradually declining demand for coal in all the great markets, there has still been a tendency to develop new mines and enlarge the capacity of old ones until the possible output has largely exceeded consumption or any probable demand. There has moreover been a diversion of unusual quantities of coal from Pennsylvania to western markets, occasioned by the utilization of natural gas as a fuel in many of the mills and manufactories of that State; and Ohio and Indiana coal is brought in large quantities to distributing points in the west, thus throwing all producers into active competition for contracts, and pushing them into new fields of operation, to the utter demoralization of the prices of fuel. This again has reacted disastrously upon the wages paid to miners, and thus while proprietors have been struggling to save their property, miners have been either struggling to live on reduced earnings, or to live without any, pending a strike for more.

But this unfortunately is not a new aspect of affairs for this industry. The last three years have each been equally marked by depression and decline. During that period the average value of

coal per ton at the mine for the State at large as reported to this office has fallen off from \$1.51 in 1883 to \$1.17 for 1885, while corresponding averages computed for the prices per ton paid for mining show a decline from .80.2 cents to .71.5 cents. These averages, however, are less forcible illustrations of the impairment of prices and earnings than the minimum figures. We find upon reference to St. Clair county that the average value of the product of 75 mines in that county is reported as .79.2 cents per ton at the mine, while the output of two mines of considerable importance is valued at only 56 cents per ton. The average price paid for mining in this county is 44 cents, but the minimum reached for hand mining has been 31 cents per ton. This is the field tributary to the St. Louis market, and two factors contribute to intensify competition and reduce values,—one, the active participation of the carrying companies in the coal trade, and the other, the use of mining machines in some of the larger collieries.

In the northern part of the State, especially in that field tributary to Chicago, the average value of coal has declined from \$1.60 to \$1.35 per ton, and the price of mining has declined 10 cents, or from 90 to 80 cents a ton since 1882. Ten years ago coal in some parts of this field was worth \$1.75 at the mines, and the price of mining was as high as \$1.25. Prices declined, however, from 1875 to 1880, when they had reached a point nearly as low as that of to-day. The year 1880-81 witnessed a revival of trade and better prices, which were maintained for that year and the succeeding one, but since then a gradual falling off has taken place until the present time.

Mining interests in this State during the past year, and more especially during the late summer, have been disturbed and depressed to a degree not before attained since the industry assumed importance. As usual in crises of this character, the burden falls most heavily on those least able to bear it. There is hardly a locality in the entire field in which wages have not been reduced from a standard already low. The resistance which has been offered to these reductions has been determined, and in some instances prolonged, and although some compromises have been effected, the ultimate result has been the failure rather than the success of the miners.

It was shown in the statistics of wages published in the last report of this bureau, that the average earnings for miners having families, was for that year \$385, while the cost of maintaining those families, which consisted, on an average, of five members each, was \$435 per

annum, the difference in these sums representing the earnings of women and children, or the record of unpaid debts.

The manner of living which these figures imply can hardly be conjectured, by the multitude of the more prosperous, yet this standard of living was only secured as the result of the most arduous and personally hazardous manual labor on the part of these people. When it is considered that they have since then been obliged to submit to still further impairment of their meager earnings, and that in their futile efforts to avert this calamity, they have been lying idle, in some instances for months, it can readily be seen that the average condition of this large body of industrious men is most deplorable.

The forlorn hope of this class is in a revival of industrial prosperity throughout the State and country. No business is so sensitive to changes for the better or worse in manufactures and trade. Succeeding the long depression prior to 1881, prices of mining advanced close upon the advance in coal, and any general activity in the demand now will doubtless be followed by such a competition for labor, that men may once more obtain not only fair wages for work, but that which is better, continuous work.

STATISTICS FOR THE YEAR.

There are connected with the mine inspection service of the State five duly commissioned inspectors, who are designated by the Governor upon the recommendation of a board created especially to pass upon their qualifications for those positions; and they serve for a term of two years. Their duties, under the statute, require them to be constantly engaged in the examination of mines, with a view to securing compliance with the law governing their construction, ventilation and management, and they are also required to procure certain statistics of the industry, and to make annual report of the same, together with reports of their action as inspectors, to this bureau.

These reports constitute a volume of exact data, which are alike valuable for reference and comparison, and present in statistical form all the aspects of the situation in the coal fields of this State.

From these reports we compile the following summaries as to the volume of business done for the year ending July 1, 1885:

Number of counties producing coal.....	49
Number of mines and openings of all kinds	786
Number of employés of all kinds.....	25,446

Number of tons of coal mined	9,791,874
Aggregate value of the same at the mines.....	\$11,456,493
Average value per ton at the mines.....	\$1.17
Average number of days of active operations	225
Average price per ton paid for mining	\$0.72.5
Number of kegs of powder used.....	140,352
Number of men killed	39
Number of men injured, so as to lose time.	176
Number of tons mined for each life lost.....	251,073
Number of employés for each life lost.....	652

These summaries present some differences and contrasts with the results obtained in former years worthy of notice.

NUMBER OF MINES.

The number of mines and openings of all kinds reported this year is considerably larger than before, which is due in part to the opening of new coal, but probably more to the fact that the territory in the several districts is receiving more careful scrutiny each year, and certain small mines in remote regions are thus being brought to light. There are 46 more openings reported this year than last, though during the year 9 mines have for various reasons been closed and abandoned. This makes the total number of active openings 778, or an increase of 37 over the aggregate of last year. Of this total of so-called mines, 19 are "strippings," or places where the coal lies so near the surface that the soil can be profitably removed, uncovering the seam so that it can be quarried like stone. Some very excellent coal is obtained in this way at a comparatively small cost, though it is frequently of a soft and friable character and difficult of transportation.

An analysis of the mines of this State, based upon the relative amount of their output, shows in general not only the proportion of small to large mines, but also the classes which have increased the most in numbers. The following tabulation presents such a grouping for the three years last past:

Year.	No. of mines producing less than 1,000 tons...	No. of mines producing from 1,000 to 10,000 tons...	No. of mines producing from 10,000 to 50,000 tons...	No. of mines producing over 50,000 tons.....	Total.
1883	209	233	135	62	639
1884	262	273	146	60	741
1885	286	290	139	63	778

From this it is seen that the increase in numbers is wholly among the smaller mines, or at least among mines which have produced during the past year less than 10,000 tons. As the output, however, for any one year is only an indication and not a measure of capacity, some variation would always occur even among the same mines from year to year under this arbitrary subdivision. In point of fact, several mines of the first magnitude have been developed during the year, while others which are designed for a large output are in progress of development.

PRODUCT AND PRICES.

Notwithstanding the increase in the number of mines given, the total output of the State has been somewhat less than in either of the two years immediately preceding. The total tonnage for 1884 was 10,101,005; this year it is 9,791,874, a difference of 309,131 tons. This falling off in product is traceable to the third and fourth districts, the output of the other districts being substantially the same as last year. In these two districts occurred the longest strike of the greatest number of men reported for the year. The Ellsworth Coal company has twelve collieries, six in Macoupin county, and two recently acquired in Madison county, in the fourth district, and four in the vicinity of Danville in the third district. In the first group there was a suspension of over three months and in the last of four months. In Macoupin county the strike extended to some neighboring mines also, and the number of men involved was about 2,375, which added to 325 in the Danville district makes a total of 1,700 men who were idle for over three months. We find the total shrinkage of product in the field covered by this strike, as shown by the reports of the two years, to be 317,458 tons. But prior to this strike the amount of coal mined had been greater than in former years, owing to an enlargement of the capacity of some of the lately acquired property of the Ellsworth Company, so that the real disparity is not so great as would otherwise have appeared.

The subjoined table shows the record of the State as a producer of coal for the last five years in tons of 2000 pounds, and, in comparison, the output of 1870 as shown by the United States census report of that year.

Year.	FIRST DISTRICT.	SECOND DISTRICT.	THIRD DISTRICT.	FOURTH DISTRICT.	FIFTH DISTRICT.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	
1870.....						2,624,163
1880.....	1,631,440	696,046	1,185,189	1,022,718	1,579,984	6,115,377
1882.....	2,540,532	710,526	1,350,020	2,075,244	2,412,321	9,115,653
1883.....	2,495,072	831,522	1,585,108	3,128,368	1,990,921	10,030,991
1884.....	2,507,370	728,341	1,932,881	2,804,183	2,128,230	10,101,005
1885.....	2,519,397	723,077	1,811,405	2,615,992	2,122,003	9,791,874

There has been, however, a rather more marked decline in the average value of coal than in the quantity produced. In order to arrive at the most exact results in this regard, averages have been computed for each county and district, and for each year, for which we have the necessary data, in the same manner, so as to reduce the comparisons to a uniform basis. In this way some changes have been made in the figures heretofore shown, both in regard to the average value of product and average price paid for mining. We present here a tabulated statement covering the average value of coal per ton at the mine in each district, and for the State for each of four years, as averaged from reports made to this bureau.

Average Value of Coal per ton (of 2,000 pounds) at the Mine.

Districts.	1882.	1883.	1884.	1885.	Percentage of decline.
First.....	\$1 75	\$1 59	\$1 49	\$1 41	19%
Second.....	1 87	1 97	1 79	1 71	09%
Third.....	1 43	1 45	1 31	1 25	12%
Fourth.....	1 33	1 32	1 09	98.5	26%
Fifth.....	1 31	1 26	96.1	89.4	32%
The State.....	\$1 51	\$1 48	\$1 26	\$1 17	22%

This shows a decline since 1882 in the average market value of this mineral in Illinois from \$1.51 to \$1.17 per ton, or 22+ per cent.

In a similar manner we compute averages for the State in reference to the prices paid for mining, premising that they are not deduced by dividing the sum of a given set of prices by their number, but by extending the gross amounts paid for the given tonnage

at each mine, and dividing the sum of these by the total tons mined, thus reaching a true average for each group of mines or counties. These averages are also computed for summer and winter, where the two-price system is in vogue, and in order to arrive at the average for the year, the amount of product at the winter price is assumed to be twice as much as that at the summer price.

Average Prices paid for Mining in each District, and in the State, for the years 1883, 1884, 1885.

Districts.	1883.		1884.		1885.		Percent- age of decline.
	Summer	Winter.	Summer	Winter.	Summer	Winter.	
	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	
First	83.4	93.4	85.4	93.2	84.5	87.8	.054%
Second	95.4	99.8	95	1.03	90.7	95.8	.082%
Third	80.3	91.1	81.4	90.3	78.5	82.9	.07%
Fourth	65.8	73.6	63.5	72.4	59.8	63.1	.125%
Fifth	58.6	63.5	54	63	47.9	52.8	.171%
The State.....	75.9	82.4	72.6	81.2	68.1	74.3	.....
The year.....	80.2		78.3		71.5		10.8%
For 4 years							14.4%

This shows an average decline in the State at large of 9 cents a ton, or 11 per cent. in the price paid for hand-mining in three years. Assuming that the ratio of decline was the same for the four years including 1882, for which year the data is wanting, and we have a falling off equivalent to 15 per cent, in even figures, for the term corresponding with that for which the average prices of coal is computed in the preceding table.

It should be borne in mind that these conclusions represent the experience of no one mine, or locality, but the *average* experience of all mines and miners in the State, and that the figures given are equally removed from the highest and lowest.

It is a fact, moreover, familiar to everyone, that a great diversity of condition is developed in different seams and places, so that the price paid per ton is not always a certain index of relative earnings. Hence the value of the detailed tables presented in subsequent pages, which give the essential facts in regard to each place as well as the price paid.

This deduction of averages, however, is entirely legitimate for certain purposes, especially for instituting comparisons with other

States, and between different periods in the same State. The foregoing tables, for instance, demonstrate and define the downward tendency in all prices during the last four years, while they also indicate where the depression has been the greatest, and thus afford those who are endeavoring to solve the fiscal and social problems of the situation, a clue to some causes and effects.

WORKING TIME.

The average number of days of active operations for all mines for the year has been 174, as against 200 for the preceding year. In other words, 786 mines are reported as having been worked at total of 133,764 days. This, of course, includes many small mines, which are only worked during the winter, or from 3 to 6 months in the year, and whose miners find other work in the interval. On the other hand the 287 mines which are engaged in the shipping trade, and are presumed to be more or less active throughout the year, are reported as having been worked a total of 64,610 days, or an average of 225 days each during the year.

That these 287 shipping mines, though only one-third of the whole number, represent in fact the mining industry of the State, appears upon an examination of their combined product as compared with that of all mines. This is found to be 9,125,810 tons out of a total of 9,791,874, or 93 per cent. The number of men employed in these mines is 22,829, out of a total of 25,446, or 90 per cent.

The deduction is that the working time of mines of this class, 225 days, is virtually that of the industry, rather than 174 days the average working time reached by including all mines.

In the last report of this bureau it was shown that the average working time in all the manufactures of Illinois for 1880 was $11\frac{1}{8}$ months, or 289 working days in the year. Compared with this, our mine workers can get only three-fourths as much work and wage in the year as the artisans in shops. In the same report statistics were presented giving the personal experience 2,129 workmen in all occupations, from which it appeared that the average number of weeks' work obtained by them in that year (1883-4) was 43.47, equivalent to 261 working days. In this group were 232 coal miners, whose separate average was 36 weeks, or 216 days in that year.

These figures are introduced to indicate the disparity between the opportunities for work offered to miners and other workmen. The coal business is essentially irregular here, because Illinois coal can not

ordinarily be stored successfully. The demand, consequently, fluctuates with the actual consumption, and the trade is thus at the mercy of the elements, and is liable both to be taxed beyond its capacity and to be correspondingly depressed. The large companies or syndicates, which are able to produce coal in such large quantities, and at so small cost as to virtually monopolize the railroad and other large contracts, though they realize a low average price, can control their volume of business so as to afford more steady work to their men. On the other hand, a surplus of men is usually congregated at such places so that they cannot all make full time. In proportion as any coal company, large or small, can secure a uniform sale of its product summer and winter, in that proportion can the business be managed for the permanent prosperity of owners and employés.

Assuming any average as the annual earnings of coal miners working 225 days in the year, it can readily be seen that if they could get 300 days work, the gain in earnings would in many instances constitute the difference between adversity and prosperity.

POWDER IN MINES.

The practice of blasting coal down after under-cutting it, or from the solid wall, prevails in this State almost universally, except in mines where the coal is worked by the long-wall system. The number of these is limited, as certain conditions are essential to this mode of working, which do not generally prevail. We consequently find only 41 long-wall mines in the State, though they are uniformly of the larger class and in these, powder is not used in the face of the coal. There are localities also where the coal in pillar-and-room workings, can be wedged down without the use of explosives, but the prevailing method of obtaining the mineral from the seam, is to blast with powder.

The powder is paid for by the miner, and used at his discretion. It is therefore a constant element in his expense account, and of greater or less magnitude according to the nature of the seam and the skill of the operative.

The use of powder, moreover, affects both the miner and the management in another essential particular. It creates quantities of offensive gaseous smoke in the rooms and galleries, interrupting the work of the miner, vitiating the air currents, and demanding a more powerful ventilating apparatus than would otherwise be required.

In view of the significance which thus attaches to the use of this explosive in mines, and to show the relative quantities used in different seams and localities, the record of powder consumption at each mine has been procured through the inspectors, and will be found in the tabular statements accompanying their respective reports.

From them we compile the following summary, presenting the aggregate and average results on this subject for 415 mines in 31 counties.

CONSUMPTION OF POWDER, 1885.

DISTRICTS.....	COUNTIES.	No. of mines.....	No. of men.....	No. of tons mined by the use of powder.....	No. kegs used....	No. tons per keg..	No. kegs per man
1	LaSalle	16	835	520,832	4,964	104.9	5.94
	LaSalle	8	222	101,194	2,279	44.8	10.2
2	Bureau	15	138	40,907	887	46.1	6.42
	Henry	4	172	82,435	666	123.7	3.87
	Marshall	11	27	6,320	125	50.5	4.63
	Mercer	15	222	107,017	1,768	60.5	8
	Rock Island	19	252	100,676	2,019	49.8	8
	Schnvler	3	12	3,402	137	24.8	11.4
	Stark	7	32	11,310	172	65.7	5.4
	Warren	4	14	5,185	102	50.8	7.3
3	Fulton	33	632	270,412	7,719	34.8	12.2
	Logan	3	227	172,500	6,037	28.7	26.5
	Menard	7	262	139,120	5,725	24.3	20.3
	Peoria	63	876	464,300	22,163	20.9	25.3
	Tazewell	7	60	23,779	1,256	18.9	21
	Vermilion	42	759	413,180	8,492	48.6	11.2
4	Christian	1	47	33,203	337	98.5	7.2
	Edgar	1	37	16,200	360	45	9.73
	Macon	1	40	22,000	1,337	17.8	31
	Macoupin	16	1,436	1,064,311	9,941	106.5	7
	Madison	13	610	573,318	6,464	88.7	10.6
	Sangamon	13	907	646,229	24,045	27	26.5
5	Clinton	2	101	59,442	752	79	7.4
	Jackson	7	315	150,286	730	205.8	2.3
	Marion	2	222	130,101	3,400	38.2	15.2
	Perry	14	501	258,130	6,173	41.8	12.3
	Randolph	11	103	61,124	1,904	32.1	18.5
	Saline	9	242	109,796	1,925	57.1	8
	St. Clair	61	1,204	1,035,103	10,394	91.5	8.6
	Washington	3	66	47,522	1,324	35.9	20
	Williamson	4	110	67,208	970	69.3	9
	Totals	415	10,683	6,736,652	134,547		
	Averages					50.06	12.59

Several interesting facts are developed upon an examination of this table. As an ultimate result, we have 10,683 miners at work in 15 mines, producing 6,736,652 tons of coal, and consuming in the process 134,547 kegs of powder, of 25 pounds each. This reduced

to its equivalents is an average of one keg of powder for every 50 tons of coal made, and an average of $12\frac{1}{2}$ kegs used by each man for the year.

Examined in detail, however, the widest differences in these ratios are discovered in different counties. Noting the extremes presented, we find that in Jackson county the least powder is used per ton, the figures showing that 205.8 tons are mined for each keg of powder used, and that the average charge upon the men is only for 2.3 kegs per annum. The greatest amount of powder used per ton is reported from Macon county, where in one mine only 17.8 tons are obtained per keg, and where the miner uses 31 kegs per annum. In the same general category, however, are the mines of Tazewell, Peoria, Menard, Sangamon and Logan counties, whose averages are all less than 30 tons to the keg. The great coal counties, however, LaSalle, St. Clair and Macoupin, give us an average of about 100 tons for each keg, and the miners buy from 6 to 8 kegs a year.

Grouping the several counties in their respective districts, and the following results are shown :

DISTRICTS.	No. of mines.....	No. of men	No. of tons mined by the use of powder.....	No. of kegs used..	No. of tons per keg.....	No. of kegs per man.....
First	24	1,057	622,026	7,243	85.8	6.85
Second	78	869	357,352	5,876	60.8	6.75
Third	155	2,816	1,483,371	51,422	28.8	18.3
Fourth.....	45	3,077	2,355,291	42,434	55.5	13.8
Fifth.....	113	2,864	1,918,712	27,572	69.5	9.63
Totals	415	10,683	6,736,652	134,547	50.06	12.59

This shows, in general, that under the district classification the greatest amount of powder is used in the Third district, and the least in the First, while the Fourth district presents nearly the same average as that of the State, and the Second and Fifth both produce more than the average per keg.

These comparisons and contrasts indicate very forcibly the importance of this factor in mining enterprises, and to both classes engaged in them. It is a matter of material consequence to the manager whether his ventilating apparatus has merely the natural air currents to move, or whether he must maintain a power and speed sufficient to remove or dissipate the gases liberated from such volumes of powder smoke as this consumption implies. And the miner also

must count the cost of his powder before he can judge of the adequacy of his pay, and consider, as well, the increased hazard arising from the use of greater quantities.

It was in recognition of the diverse conditions created in mines by the use of powder, that the late Legislature invested inspectors with discretion as to what volume of air, if any, in excess of 100 cubic feet per man per minute should be required. The wisdom of that act, as well as the fallacy of attempting to establish any uniform rule for all mines, is abundantly shown in this tabulation of the facts in regard to the relative amounts of powder used.

CASUALTIES IN MINES.

The loss of life and limb which so frequently results from mining operations, and the personal peril to which miners are continually exposed, is a feature of this industry which not only commands public sympathy, but in this, and other governments having a mining population, has been recognized as a matter worthy of the special consideration of the State. The framers of our own constitution made it the duty of the General Assembly to pass laws for the protection of the lives and health of miners, and thus made them, in respect to their physical safety, the wards of the State. No other class is so recognized, because no class is placed in such mortal peril at their daily task, no class is so wholly at the mercy of incompetence, indifference and cupidity on the part of others.

Unfortunately, however, an enactment can at best only mitigate the dangers of mining, and curtail the list of sudden deaths and painful injuries. They are a part of every year's mining history, and particularly of all statistical records pertaining to mines and mining.

An examination of the reports of the several inspectors will disclose the details of the casualties which have occurred in the various districts, and their causes and results. From these we make the following summaries for the State for the year:

There have been 39 persons killed outright during the year, and 176 more or less seriously disabled. As compared with former years this is, however, a favorable showing. In the preceding year there were 46 lives lost, and 197 persons injured, while for 1833, the year of the Braidwood disaster, 134 miners met with sudden death, and 231 were hurt so as to lose more or less time. In tabular form the record is as follows:

Year.	Lives lost.	No. injured.	Total casualties.	No. of tons mined for each life lost.
1883	134	231	365	78,424
1884	46	197	243	219,587
1885	39	176	215	251,074
Totals.....	219	604	823	Av. 138,821

Although the experience of the last year is less deplorable than that of previous years, still the fatality of 1882 makes a large total for the three years, and the average tonnage for each life lost in that period is much lower than averages shown in other States.

An analysis of the causes of casualties here reported affords a forcible warning to miners and managers alike.

Casualties and Their Causes.

Cause.	Result.	First District	Second District	Third District	Fourth District	Fifth District	Fatal.....	Non-fatal	Total.....
Falling of roof or rock.....	Fatal.....	6	.....	2	9	3	20	.....	138
	Non-fatal.	20	19	16	28	35	.....	118	
Gas	Fatal.....	1	1	.....	.....	.....	2	.....	3
	Non-fatal.	1	.....	.....	.....	.....	.....	1	
Premature discharge of blasts..	Fatal.....	.....	.....	.....	1	.....	1	.....	11
	Non-fatal.	1	1	.....	1	7	.....	10	
Falling down shafts.....	Fatal.....	2	2	1	1	1	7	.....	8
	Non-fatal.	.....	.....	1	.....	.....	.....	1	
Cages	Fatal.....	1	.....	1	.....	.....	2	.....	13
	Non-fatal.	4	3	4	.....	.....	.....	11	
Pit-cars	Fatal.....	.....	.....	1	.....	1	2	.....	18
	Non-fatal.	3	2	2	4	5	.....	16	
Boiler explosion...	Fatal.....	.....	.....	.....	1	.....	1	.....	2
	Non-fatal.	.....	.....	.....	1	.....	.....	1	
Struck by timbers.	Fatal .....	.....	.....	1	.....	2	3	.....	4
	Non-fatal.	.....	.....	.....	.....	1	.....	1	
Drowned in sump.	Fatal .....	.....	.....	.....	1	.....	1	.....	1
Miscellaneous.....	Non-fatal.	2	6	2	3	4	.....	.....	17
Total.....	Fatal and non-fatal	41	34	31	50	59	39	176	215

The noticeable feature in this classification is the fact that 128 out of the 215 accidents, or 64 per cent of them, were occasioned by the fall of overhanging coal or rock, or the so-called roof of the coal. Accidents of this class are more frequent and fatal than any other in this field and elsewhere, and they arise from a lack of correct judgment on the part of the miner as to when a roof is safe and when it is not. He has the material at hand to make everything fast overhead, and knows more about the character of the roof under which he is working, and the amount of propping it requires, than any one else can. He sets a prop wherever and whenever he believes it necessary, yet he cannot always be sure. He is working in darkness that can be felt, save for the smoky glimmer of the lamp on his cap; he fails to discover some crevice overhead, or in the din of his work fails to hear some warning sound, and in a moment is crushed out of existence. The customary verdict is carelessness, but a man is not careless about life. He loves it, and to maintain it will even go into the caverns of the earth and work for small pay, face to face with death itself. Under some impulse of weariness, or in his eagerness to earn his meagre wage, he may for a moment be off his guard, and pay the penalty, but it is to the inherent peril of his occupation, not his recklessness, that the consequences should be ascribed.

The casualties from this cause here reported are not unusual. While the reports of this year show 64 per cent. of all accidents to have been of this character, those of last year show 67 per cent., and of the year before 54 per cent. in this category.

An unusual mortality is observed, however, from falling down shafts, there being seven of these tragic occurrences reported for the year, the details of which will appear in their place in the inspectors' reports. In addition to these, three have been killed by timbers, two by cages, two by pit cars, two by gas, one by boiler explosion, and one by powder blast.

COMPANY STORES.

Public attention has been directed somewhat of late to the evils of the so-called "truck-store system," by which is understood the practice on the part of employers of selling goods to their employés on such terms and in such a manner as to oppress them. Two attempts have been made in the General Assembly of the State to enact a law which should in effect prevent the practice. One of

these was successful until the proposed bill reached the executive, when it was returned with his veto. Last winter the effort was renewed in the 34th General Assembly, under the special championship of the Hon. Mr. Morgan, member of the lower house, from Will county, but after having secured the passage of the bill by the House, it was defeated in the Senate.

The discussion which this bill called out, failed to develop any exact information as to the real magnitude of the evil, or to define the limits of its operation. It was understood that a company might, by compelling its employés to buy supplies at the company store, impose serious hardships upon them, if so disposed, and in this way depreciate their earnings to a minimum, while nominally giving them good work and wages. The difficulty was to know how general such a practice was, in order to devise an effective remedy.

The people engaged in coal mining were most frequently cited as the offenders in this direction, and their employés as the victims. In fact it hardly admits of a doubt that the practice of maintaining company stores is far more general in the coal fields than elsewhere, and that it is exceptional in other industries. Large manufactories are usually located in or near towns where facilities are abundant for supplying the wants of working people, while mining enterprises are more frequently carried on in places remote from business centers, and a mutual interest might be subserved by a legitimate disbursement of supplies to miners and their families. At the same time an opportunity is thus presented to practice petty extortions upon them if the employers choose to pursue that policy.

In order to bring some facts to light on this subject, an enumeration has been made of all the stores in the State, operated by mine owners or their representatives, for the use of their employés. In doing so the additional fact has also been ascertained as to how many of such stores are exposed to competition with other stores, and how many are free from it. This fact in regard to the existence or absence of competition is brought out because although employés may be compelled, or at least may recognize a pressure not stated in terms, to trade at their employer's store, still the influence of other dealers in the vicinity would operate to check, or at least modify, any attempt at extortion in the matter of prices.

Upon the very violent assumption that all employers would or do take advantage of the necessities of their men, in so far as the opportunity is presented, the distinction drawn between these classes is a valid and important one, because the opportunity in one case is so much

greater than in the other. To those who deal honorably with their employés under any circumstance, conditions of this kind would be immaterial.

The following is the result of the enumeration :

DISTRICTS.	Whole number of stores.	With Competition.	Without Competition.	Average number of men employed.
First	16	9	7	2,027
Second.....	9	6	3	526
Third.....	24	13	11	1,812
Fourth.....	7	5	2	554
Fifth.....	19	15	4	967
Total.....	75	48	27	5,886

The total number of stores maintained at coal mines in this State is thus found to be 75, of which number 48 are located in towns or villages where they are subjected to competition with other dealers in the same line of trade, and 27 are so detached as to be free from such competition. We have in all 783 mines on record, many of which are comparatively insignificant. Assuming that 300 of them are mines of some pretensions, and entitled to rank among business enterprises, we should have one-quarter of them equipped with stores. The number of men connected with the 75 mines at which stores are established is in the aggregate 5,886, or about one-fifth of the whole number of mine employés in the State. Our conclusion then is, that the company store is found at one-fourth of the principal mines in the State, and that the people who are exposed to the influences of those stores are in number one-fifth of all those at work in and about mines.

But two-thirds of these companies are doing business beside other merchants, and competing with them for the trade of the general public, consequently their prices are presumably the current prices of the place, while one-third, or 27 stores, are not restrained by the surveillance of rival dealers, and prices may be made more arbitrarily.

There are then presumably somewhat more than 2,000 of the mine employés of the State who are virtually confined in their purchase of the necessities of life, to the goods and prices offered them by employers who are free from the restraints or stimulus of compe-

tion, and somewhat more than 3,000 who are expected to spend their wages with employers who compete with other merchants and for other customers.

As a further indication of the relation the supply stores sustain to miners, we have replies from 34 of the lodges of the Miners' Protective Association, to inquiries made on this subject. Out of the 34 there are 17 which report the existence of supply stores, and of these 17 stores it is reported that in 10 instances no compulsion is used, and that in 7 there is compulsion. To the inquiry as to the nature of this compulsion, the answers in two cases are, the demand is openly made, and in five cases that it is understood rather than expressed.

This seems to cover the case so far as mining stores are concerned, and though the figures may not be imposing, there is still room for very large commiseration in the contemplation of the possible hardships which may be inflicted upon many of the industrious poor by this process of paying wages with goods at arbitrary prices.

No compilation of figures, however, can be made to indicate what measure of suffering is really imposed in this way. These facts merely point out certain opportunities for abuses. We must presuppose a disposition commensurate with the opportunity in order to make a case, and the statistics of evil dispositions are wanting. When it is shown what percentage of the human family is cruel and extortionate, we can judge better of the extent of the abuses which grow out of the opportunities presented by the company store.

That abuses of this character are practiced, and that in some instances they are grievous, does not admit of a doubt.

To illustrate the practical workings of the system in one of the larger coal fields, we transcribe the statements made to this bureau by a miner familiar with the facts.

Company No. 1, owns a store located in the village where there are several other stores. The miners are expected to trade at the company store, though no compulsion is used. The price of goods is about the same as at the other stores.

Company No. 2, has a store in the mining village, where there are two other stores, but the company store does the bulk of the business. Goods somewhat higher than in the nearest town, five miles away. No compulsion used to make men trade with them.

Company No. 3, runs a store at the mine, a mile and a half from one town and five miles from a larger one. Prices are higher than in the latter place, and the men are given to understand that they must patronize the company.

Company No. 4, has a store with no competition within four miles. Goods a little higher than in neighboring towns, though the merchants from two other towns deliver goods daily to the miners.

Company No. 5, operates a store in the business center of town, competing for outside trade. Prices the same as at other stores, and no restraint is placed upon their employés.

Company No. 6, has a store in town, three and a half miles from the mine. Goods are delivered by wagon to the miners daily, and they are expected to trade with the company. The store is run in the superintendent's name, but has all the characteristics of a company enterprise. The prices are the same as those generally charged.

Company No. 7, has a store connected with mine and tile-works, a mile and a half from town, at which employés are expected to buy their goods.

Company No. 8. Miners at this place have no choice but to trade at the company store, which is without competition. Prices higher than in neighboring towns.

Company No. 9. The same is virtually true of this case, though the store is not run in the name of the mine owner. There is no compulsion exercised upon the miners, but there is no town within easy reach.

Company No. 10, has a store in town, and competes with all the merchants for the general trade. Miners report this the cheapest place in town at which to buy goods.

Company No. 11. Store in town doing a large business with farmers. No compulsion exercised upon employés; prices and goods the same as elsewhere.

Company No. 12, carries a large stock in the business center of town; competes actively for trade outside of miners' families, and gets it. Goods as cheap as anywhere, and miners not compelled to trade with them.

Company No. 13. Store at the mine, at which employés are expected to trade. Goods a little higher than in adjacent towns.

Company No. 14. Store in town, and goods sold at prevailing prices. Some pressure is brought to bear on employés to trade at this store, though no discharges have been known to result from a failure to do so.

Company No. 15. There is no competition at this company's store, located at the mine, and prices are somewhat higher than in town, but the miners may go to town to trade if they choose.

Company No. 16. This company has a store four miles from town, at which prices are higher than in town. Employés here have been asked to deal at the company store, and threatened with discharge if they failed to do so.

These cases illustrate the practice very fully, and show the harmful principle involved, and the possible consequences of it.

The frequent statement that no compulsion is used, must be accepted with the understanding that there is always an implied

obligation to trade at the company's store, and any disposition to ignore it would usually prejudice the employé's standing with the company. This tacit understanding is universal, and varies only in the degree with which it is enforced. There is rarely any open solicitation of trade, or threat made for failure to trade, but the employé who does not is regarded as an undesirable man to retain.

Many attempts have been made in the history of human effort to ameliorate human condition, to reach and remedy this evil, which in other times and places has had a wider and more odious development than it has ever attained in this State. Laws have been enacted on the subject, more especially for the behoof of miners, in England, in Pennsylvania and in Ohio, which have been readily and notoriously evaded, and the conviction has become impressed upon those miners whose experience and observation have been widest, that other means to the same end may be made more effective.

It is believed that the real difficulty lies in the custom of paying wages at long intervals. This compels those who have not money in hand to defray their living expenses for a month or six weeks, to open an account with the company for supplies on the credit of wages which they have earned but have not received. To correct this, it is urged that if all wages be paid in cash, then in proportion as they are paid frequently will the miner become independent of the supply store, which will then only subserve its legitimate purpose as a convenience to the miner, and have to depend upon the substantial inducements it can offer to secure his trade. This has been the experience in England, where legislative enactments signally failed in practice to afford the relief which finally came with the introduction of the weekly cash payment of wages.

MINERS' RETURNS.

The following facts in regard to the prices which miners receive for their work, and have to pay for incidentals, in various parts of the State, together with the conditions governing both, have been compiled from statements made by miners to Mr. P. H. Donnelly, Secretary of the Miners' Protective Association, and represent their individual experiences, for the most part in the months of July and August.

BOTH SIDES OF THE ACCOUNT.

PLACES.	PRICES PAID TO MINERS.					PRICES PAID BY MINERS.								
	Cents per ton for mining....	Pounds per ton.....	Thickness of coal—feet and inches.....	Entry work—per yard.....	Width of entries—feet....	Dimensions of screens.....	Width between screen bars— inches.....	For powder per keg	No. tons mined for each keg of powder used	For oil per gallon.....	For squibs per box.....	For sharpening tools per month.....	For rent per month.....	For coal per ton, delivered
Belleville.....	31	2,000	5-6	\$1 30	12		2	\$2 00	115	90	40	+	\$5 00	\$1 25
Breed's Station.....	31		6	1 25	7			2 50	100	\$1 20	35	+	4 50	
Braidwood.....	62½	2,000	4-4	2 00	6		1½	3 00	30	60	50	35	5 00	2 25
.....	90	2,000	2-9	2 00	6		2½	3 00	80	60	35	25	5 00	1 88
.....	85	2,000	3			10×4½	2½	2 00	60	60	45	25	5 50	2 50
.....	90	2,000	3-3				2½	2 00	70	70	50	25	6 50	2 15
Braceville.....	75	2,000	2-7				1	2 00	60	60	50	35	5 00	2 00
Clark City.....	85	2,000	2-9			14		2 00	60	75	35	80	5 00	87½
Coal City.....	85	2,650	7-6	1 00	16			2 50	20	80	40	+	5 00	1 50
Collinsville.....	75	2,000	5	1 50	7			2 50	20	80	40	70	5 50	2 00
Cuba.....	70	2,000	6-6	1 55	6	12×4	1	2 20	40	80	40	70	5 40	2 00
Grape Creek.....	50	2,000	6-6	1 55	6	16	1½	2 20	40	80	40	70	5 40	2 00
.....	50	2,000	7			14	13½	3 00	28	1 00	50	25	5 00	1 50
Girard.....	85	2,000	2-10			8½		3 00	65	80	50	25	5 00	1 50
Godley.....	62½	2,000	4-8	1 25	8	9×6	1½	2 25	39	80	40	50	3 75	1 32½
Ledford.....	50	2,200	4-9	2 00	6	10	2½	3 00	15	1 00	50	50	7 50	2 50
Lebanon.....	68	2,100	5-2	2 00	8			2 00	15	90	50	75	6 75	2 50
Lincoln.....	80	2,000	3-6	1 75	7	4×6	1	1 75	40	90	35	50	5 00	1 50
Mt. Pulaski.....	37½	2,000	6-6		16			2 25	30	1 00	50	1 00	5 00	1 50
Reutcher.....	62½	2,000	6	1 50	12	14	7½	3 00	35	1 00	50	\$1 00	5 00	1 75
Springfield.....	62½	2,000	5-9	2 00	10	9×4	2½	2 50	30	1 00	35	1 00	7 00	1 50
.....	70	2,000	5		7	8×6	1½	2 50	100	60	40	50	5 00	2 25
St. David.....	70	2,000	5	1 50	6		2½	2 00	100	70	30	50	6 00	2 25
Streator.....	50	2,000	6-6	1 00	16	6×6	5½	2 00	100	70	30	50	1 70	2 50
Staunton.....	50	2,000	7-6	1 00	16		7½	2 00	50	90	40	50	6 00	2 50
Troy.....	50	2,250	5-6	75	20			2 50	50	90	40	50	1 75	1 75
.....	52½	2,000	5-6	75	20			2 50	50	90	40	50	1 75	1 75
West Belleville.....	31	2,000	5-6	2 00	12		7½	2 00	80	90	30	50	3 00	1 75
Worden.....	31	2,000	5-6	1 50	12		7½	2 00	80	90	30	50	3 00	1 75
.....	50	2,250	6-6	1 50	12		7½	2 00	40	70	35	50	3 00	1 25
Averages.....	2,032			\$1 48	10 2			\$2 37	55.1	81	42		\$5 30	\$1 78

* Revolving. + Ten cents per 100 bushels.

† One cent per ton.

Here are statements from 31 sets of men as to the essential details of pay and expenses, in as many different mines, and in 23 localities. Arranged thus in tabular form, they afford an interesting illustration of the diversity of conditions under which the miner works, a close analysis of which is necessary in order to form a correct opinion as to the relative value of the wages he receives.

It will be observed that the unit of weight is almost universally the ton of 2,000 pounds; that the thickness of the coal varies from 2 feet 7 inches to 7 feet 6 inches, and that for reducing this mineral in the wall to merchantable form the price varies from 31 cents to 90 cents a ton. The dimensions of screens given, though imperfect, indicate a corresponding diversity in area, though the width between bars, in a majority of cases, is seven-eighths of an inch, one case only being reported where the width is two inches.

This compilation of prices paid in different places for the items of incidental expense to which the miner is subjected, presents the other side of the account, and also affords some contrasts.

We find the price paid for powder by the miner, who buys it ordinarily from his employer, varies from \$1.75 to \$3.00 per keg, but averages \$2.37. But in connection with this column is another showing the number of tons produced per keg of powder used, or, in other words, the relative quantity of powder which different coals require, which is quite as important a matter as the price of the powder. This latter column shows that from 15 to 115 tons are mined per keg, with an average of 55 tons, which confirms the average for the State shown by a former table based upon different data.

Oil ranges from 60 cents to \$1.20 per gallon, though there is only one instance given of the latter price, and the average price is 81 cents. Squibs cost from 30 to 50 cents per box, with an average of 42 cents. The charges given for sharpening the miners' picks and drills show wide differences, and depend largely upon the amount of sharpening required.

Miners' cottages are usually built of two or three sizes, to accommodate the larger or smaller families, and the rental in these returns is sometimes reported as from \$4 to \$6, or otherwise, according to the sizes of the houses. In tabulating cases of this kind, the average of such prices has been taken, and we thus find house rent stated as from \$3.00 to \$7.50, with an average of \$5.30. Coal delivered at the miners' houses is seen to cost them from 87½ cents a ton to \$2.50, the average being \$1.78.

Wide as the differences in all these details seem, they in some cases offset each other so as to make the average condition in one place about as good as in another. Yet this table demonstrates very fully the necessity of considering all the terms under which a miner is working, in order to arrive at the relative amount of his pay.

CONCILIATION.

A report of this date and character would hardly be complete as an exponent of the present situation in mining matters without reference to a noteworthy conference which took place recently in Chicago between representative coal operators and coal miners from this and other States. For the first time in the history of mining in this country the representatives of these two classes met, for the purpose of coöperating in a movement looking towards the establishment of permanently harmonious relations. It was not a meeting for the purpose of adjusting any existing strike, but to anticipate and frustrate difficulties of this kind altogether. As such, it was a most significant gathering, and though no conclusions were reached except that the effort should take even a wider scope, the movement itself and the motive which inspired it are alike most hopeful indications of a better day.

The following is an address which this body issued as an expression of the sentiment which pervaded the meeting, and as an appeal to all parties in interest to attend the adjourned meeting at Pittsburgh, Penn., December 15, 1885:

TO THE MINERS AND MINE-OWNERS OF THE STATES AND TERRITORIES.

At a meeting held in Indianapolis Sept. 12, 1885, by the executive board of the National Federation of Miners and Mine Laborers, a resolution was passed instructing its secretary to draft an address to the mine operators of the United States and Territories, asking for a joint meeting with the board for the purpose of adjusting market and mining prices in such a way as to avoid strikes and lockouts, and give to each party an increased profit from the sale of coal.

In pursuance of this call and in response to this invitation a convention assembled in Chicago Oct. 15, 1885, composed of a number of coal operators having mines in Illinois, Indiana, Ohio and Pennsylvania, and of the delegates representing miners employed in the various coal-producing regions of the country.

The undersigned committee, consisting of three mine-owners and three delegates representing the miners' organizations, was appointed to make a general public presentation of the objects and purposes of this convention, and to extend an invitation to all those engaged in coal mining in America to lend their active coöperation toward the establishment of harmony and friendship between capital and labor in this large and important industry.

The undersigned committee believes that this convention will prove to be the inauguration of a new era for the settlement of the industrial question in mining regions in accordance with intelligent reasoning, and based upon fair play and mutual justice.

The history and experience of the past make it apparent to every intelligent and thoughtful mind that strikes and lockouts are false agencies and brutal resorts for the adjustment of the disputes and controversies arising between employing capital and employed labor. They have become evils of the gravest magnitude, not only to those immediately concerned in them, but also to general society, being fruitful sources of public disturbance, riot and bloodshed. Sad illustrations of this truth are now being witnessed in certain of our large cities, and in several of the mining and manufacturing centers of the country. These industrial conflicts generally involve waste of capital on the one hand, and the impoverishment of labor on the other. They engender bitter feelings of prejudice and enmity, and enkindle the destructive passions of hate and revenge, bearing in their train the curses of widespread misery and wretchedness. They are contrary to the true spirit of American institutions, and violate every principle of human justice and of Christian charity.

Apart and in conflict, capital and labor become agents of evil, while united they create blessings of plenty and prosperity, and enable man to utilize and enjoy those bounteous resources of nature intended for his use and happiness by the Almighty.

Capital represents the accumulated savings of past labor, while "labor is the most sacred part of capital." Each has its respective duties and obligations toward the other. Capital is entitled to fair and just remuneration for its risks and its use, and must have security and protection, while labor, on the other hand, is as fully and as justly entitled to reward for its toil and its sacrifices. Each is entitled to its equitable share, and there is no law, either human or divine, to justify the one in impoverishing and crushing the other. God tells us "that the laborer is worthy of his hire," and threatens the vengeance of heaven upon the oppressors of the poor.

The question of what the one should pay and the other receive in compensation, can be best determined by friendly conferences, where intelligence and arbitration will take the place of the usual irrational and cruel methods of the past. It is evident that the general standard of reward for labor has sunk too low by reason of the reductions that have taken place during the past few years, and that miners generally are receiving inadequate compensation in an employment full of toil and danger.

It is also equally true that the widespread depression of business, the over production of coal, and the consequent severe competition have caused the capital invested in mines to yield little or no pro-

fitable returns. The constant reduction of wages that have lately taken place afforded no relief to capital, and, indeed, have but tended to increase its embarrassments.

Any reduction in labor in any coal field usually necessitates and generates a corresponding reduction in every other competitive coal field. If the price of labor in the United States was uniformly raised to the standard of three years ago, the employers of labor would occupy toward each other the same relative position in point of competition as at present. Such an advance would prove beneficial to their interests, as it would materially help to remove the present general discontent of the miners in their employment. However, such a general advance can not be made at the present time, from the fact that already contracts in many districts have been made between the coal operators and their miners which will last till next spring; also because contracts have been entered into with manufacturers and large consumers of coal which will continue in force up to the same time.

The committee would, therefore, suggest and invite that another meeting shall take place at Pittsburg on December 15 next, where it is hoped there will be a full representation of the miners and mine owners throughout the various States and territories, and where permanent action may be taken looking to the improvement of both interests.

The committee feels that this question of labor is one of vital importance, and that it must be met in a spirit of conciliation, and that the problems connected with it require studied thought that may lead to some wise and happy solution.

This is the first movement of a national character taken in America with the intention of the establishment of labor conciliation, and while many practical difficulties may present themselves regarding the attainment of the laudable end in view, it is to be hoped that at least an honest general effort shall be put forth by the operators and miners toward its accomplishment.

The intelligence and progress of the age demand this. Our national interests demand it. Common justice demands it. The internal peace of our country demands it. Respect for the dignity of American labor demands it. The security of capital demands it.

The freedom hitherto enjoyed in this country by our well-rewarded labor, and the intelligence and prosperity of the American workingmen, have alike been matters of congratulation gratifying to our national pride. Our industrial progress, the continuation of our extraordinary prosperity, the peace of society, and security of our free form of government, each and all require that the American workingman shall receive just and liberal wages and decent treatment. The men employed in our mines, in our factories and in our fields compose not only a vast array of citizenship, but also a mighty standing army, which is ever ready for the defense of our country's rights and the vindication of our country's honor.

They have built up our national wealth in a marvelous degree, and to its present gigantic proportions, and are, therefore, entitled to receive in the future, as in the past, not the wages of European

pauperism, but those of generous reward, which will enable them to maintain the dignity of manly labor and protect American liberties.

W. P. REND,
A. L. SWEET,
D. C. JENNE,
Operators.

CHRISTOPHER EVANS,
DANIEL McLAUGHLIN,
J. B. FLEMING,
Miners.

This movement, it will be observed, was inaugurated by leading miners, indicating their appreciation of the real difficulties which govern the situation, while it was promptly responded to by those representing large mining interests, in recognition of the demands of the hour for concerted and conciliatory action.

It is believed that the Pittsburg meeting will be largely attended, and that some propositions may be formulated upon which all interests may unite, and some policy be developed of practicable moment.

Whether such consummation be reached or not, the meeting cannot fail to be a conspicuous event in the industrial history of the country, and even should little progress be really made towards a solution of the problems presented, still the effort to solve them, and the disposition on both sides to combine for that purpose, must be regarded as a practical movement in the direction of conciliation, full of interest and promise.

EXAMINATION OF INSPECTORS.

The provisions of the Mining Act which define the manner in which inspectors of mines shall be qualified and appointed, was so modified by the 34th General Assembly as to make the date for examinations the second instead of the first week in September, and the term of inspectors two years instead of one.

The Board of Examiners accordingly announced their session for the new date, and summoned all those desiring to compete for the appointments, to appear before them and undergo the prescribed examination as to their qualifications for the duties of the office.

This board consisted of the following members:

Gen. James S. Martin, Sandoval; Mr. H. E. Hamilton, Fairbury; coal operators.

Mr. Alex. McDonald, Alton; Mr. John Harper, Colchester; coal miners.

Mr. Jasper Johnson, LaSalle, mining engineer.

There were rather more than the usual number of candidates before this board, the whole number being originally twenty. Of these two were called away, but the remaining eighteen sustained the whole examination. This consisted of the usual written and oral questions on subjects pertinent to the duties of inspectors. The rules and methods established in former examinations governed in this. The sessions continued through three days, two of which were devoted to the written and one to the oral inquiry. At the close of the proceedings and upon summing up the results it was found that eight out of the class of eighteen had sustained themselves satisfactorily to the board, having received 75 or more credit marks out of a maximum of 100. Those who made this record were:

John Keay, LaSalle.

Robert Winning, Carterville.

Walton Rutledge, Alton.

James Freer, Streator.

Thomas Hudson, Galva.

Alexander Ronald, Streator.

John G. Massie, Rock Island.

Quintin Clark, Braceville.

These names were accordingly submitted to the Governor, with the certificate of the board as to their competency to discharge the duties of inspectors, and from this number the following were chosen and commissioned inspectors of mines for the five districts specified:

Alexander Ronald, Streator, Inspector of the First District.

Thomas Hudson, Galva, Inspector of the Second District.

James Freer, Peoria, Inspector of the Third District.

Walton Rutledge, Alton, Inspector of the Fourth District.

Robert Winning, Carterville, Inspector of the Fifth District.

Four of these were made their own successors, having served in their respective districts for the two years preceding. Mr. Freer, of the Third district, is the newly appointed member of the corps, and succeeds Mr. John Rollo, who retired from the service in order to go into the coal business.

The next examination of this character will take place in September two years hence, just prior to the expiration of the terms of the present inspectors.

Evidences are not wanting that this method of deciding upon the relative qualifications of men for inspectors is not only good in itself, but that it affords a stimulus to miners and others to qualify themselves for these positions, and compete at least for the certificates of the board. It has been observed that the average of attainments displayed by each succeeding class is somewhat better than that of its predecessor, and that a new interest is being developed among miners in the study of the science of mining.

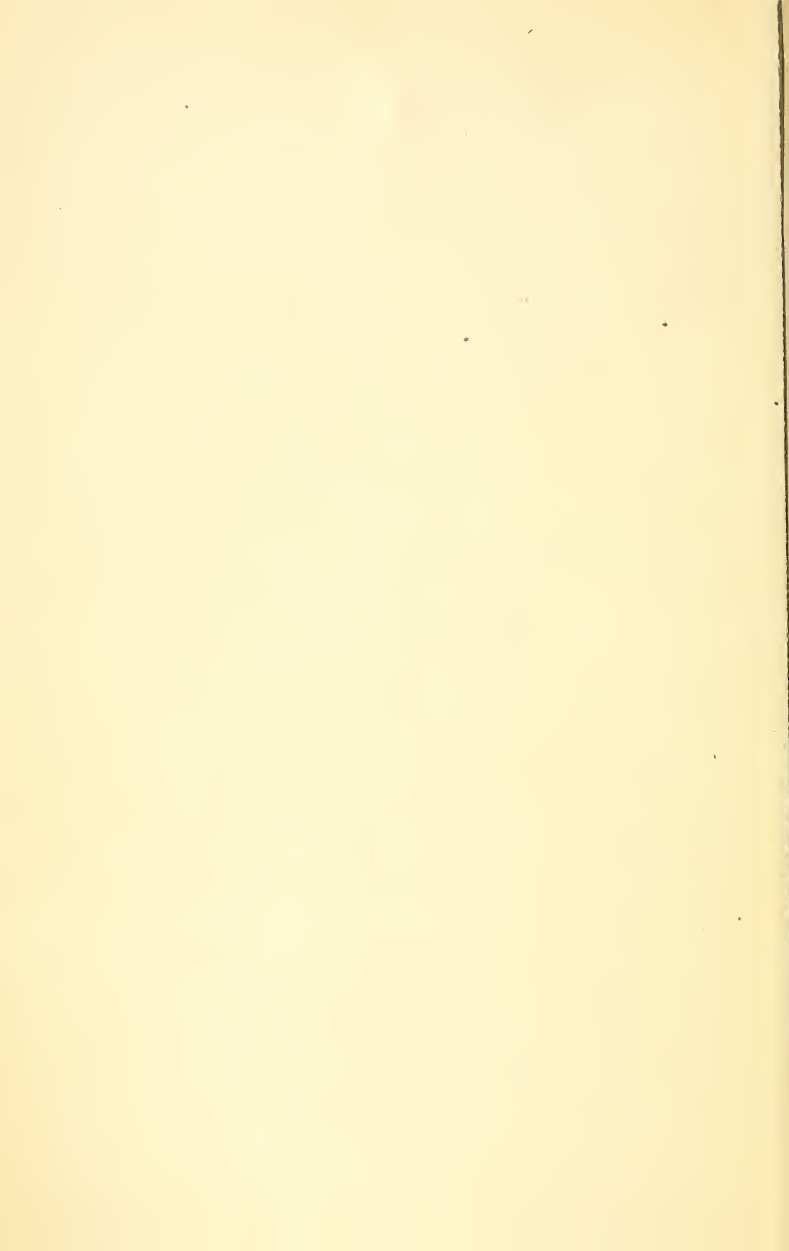
The following table is a general summary of the statistics of coal production in Illinois for the year, made up from the totals of the several districts, the details of which will be found in the succeeding reports of the different inspectors.

*Statistical Summary, showing the Number, Character, Product, etc., of the Coal Mines of Illinois, for the year 1885,
as Reported by Districts.*

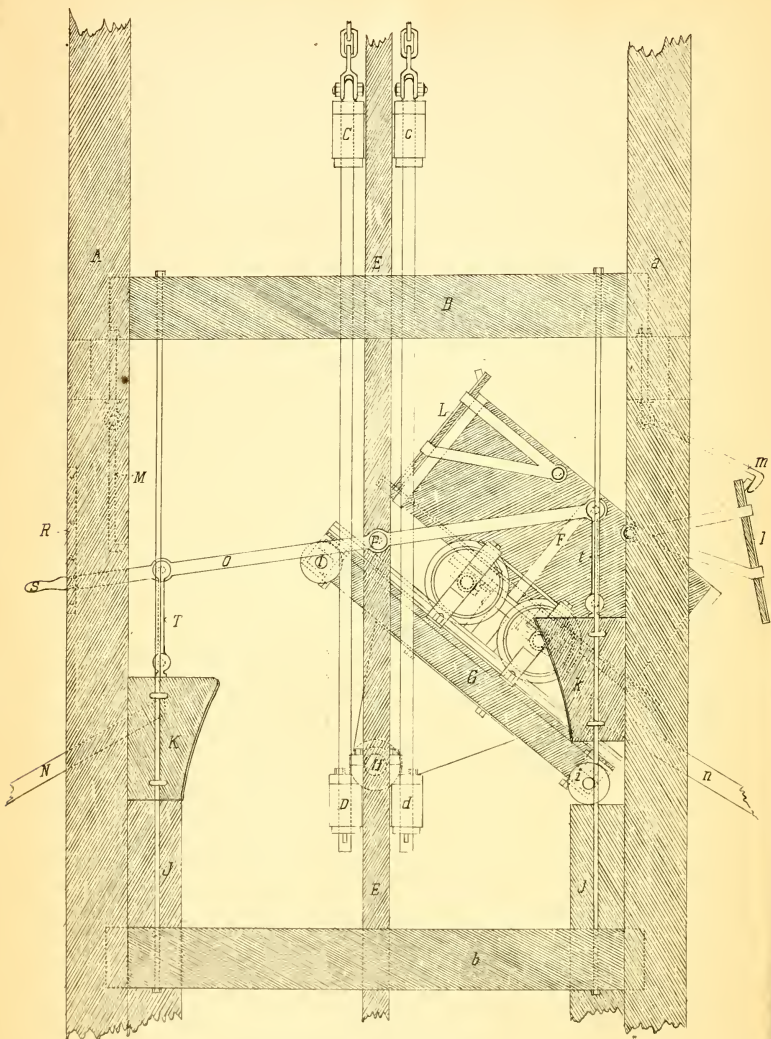
Districts.	Capital em- ployed.	Kinds of power employed.	Kinds of open- ings.	Modes of Working.	Number of miners and other employees.		Average No. of days worked....	No. of kegs of powder used....	No. of men killed	No. of men injured so'as to lose time	Average price per ton paid for mining.....	No. of tons of coal produced....	Average price of coal per ton at the mines.....	No. of mines with escapement shafts	No. of mines without escape-ment shafts.....	Kinds of power used for ventilation.															
					Other employees	Miners, winter....										Miners, summer..	Double entry	Single entry.....	Long wall.....	Pillar and room..	Drift.....	Slope.....	Shaft.....	Hand	Horse	Steam	Fan	Furnace	Steam jet.....	Natural.....	
First.....	\$1,849,100	22,429	74	43	31	36	103	137	112	34	272	212	34	2,794	597	163	10,290	10	31	31	94	723,077	171	225	51	9	41	12	214	5	
Second.....	2,327,280	26,871	236	71	135	50	81	73	64	17	125	203	6	151	55	2,619	4,234	979	1205	53	62	1,811,405	125	157	52	24	73	4	105		
Third.....	1,946,915	23,545	209	53	51	58	5	11	36	5	61	43	3,008	836	308	43,819	13	37	62	2	615,992	89.5	180	21	38	46	6	14			
Fourth.....	2,711,230	23,645	104	53	51	58	5	11	36	5	61	43	3,008	836	308	43,819	13	37	62	2	615,992	89.4	108	18	27	88	11	....			
Fifth.....	1,004,425	28,905	126	94	32	88	36	2	107	10	9	126	..	82	44	2,716	3,385	1,034	121	27,562	7	52	51.6	2,122,003							
Totals.....	\$9,898,950	119,395	786	287	499	268	291	227	440	70	276	745	41	571	215	14,194	20,272	5,174	191	140,382	39	176	72.5	9,791,874	\$1.17	642	147	128	284	36	*338

* Two cage pressure.
 † Averaged for 201 mines.
 ‡ Averaged for 72 mines.
 § Averaged for 98 mines.
 || Averaged for 121 mines.
 ° State average for 655 mines.

The average for 786 mines of all kinds is 174 days for the year.







* AUTOMATIC DUMPING CAGE *

DESIGNED & CONSTRUCTED BY W. S. CHERRY GEN. Supt. C. W. & V. COAL CO. STREATOR, ILLS.



CHERRY'S SELF-DUMPING CAGE.

This sketch gives the side elevation of Cherry's automatic apparatus for dumping coal, showing the cage hoisted and the coal dumped out.

The pit-car F is held on the platform G of the cage by a keeper; the platform is resting on a tumbling-shaft H and the guide wheels *i*; the tumbling-shaft is resting on the bottom timbers D *d* of the cage; and the guide wheels *i* rest on top of the guide rails *j* in the space between the top of the rail and the curve *k*. The end-gate *l* on the pit-car is shown raised, being held open by a hook *m* to let the coal slide out upon the screen *n*.

The cage ascending, the platform G is held in position by the guide wheels I and *i*, rolling on the guide rails J and *j*, and on coming to the top the guide wheel I strikes curve K, moving the platform G towards the opposite side; the guide wheel *i* rolls into the opening between the top of guide rail *j* and curve *k*. A loop on the end-gate *l* is caught by the hook *m* lifting the end-gate as the cage comes up, and allowing the coal to slide out of the pit-car upon the screen.

On the sketch is shown a lever O pivotted at P, and connected with the curves K and *k* by links T and *t*. The lever is held in position by notches in a rack R, and is worked by a handle S. When it is desired to dump the cage on the opposite side from that shown, the lever O is shifted, lifting curve K up and letting curve *k* down on to the top of the guide rail *j*. Then on an ascending cage the guide wheel *i* will strike the curve *k* and the platform G will be pushed to the opposite side, the guide wheel I will roll into the space then opened between the top of guide rail J and curve K, the end-gate L will be caught by hook M, and the coal be dumped out on screen N.

To render the curves more easily handled they are made only so long that when the guide wheels leave them, the displacement of the center of gravity from over the tumbling shaft will insure the further and complete dumping of the car.

It is claimed for this device that it effects a saving in the construction of the top-works, a saving of labor in handling the coal, a great saving of coal, because the coal slides out upon the chutes instead of being thrown out as it is by hand, and consequently is not so much broken up—which makes the apparatus an advantage to the miner as well as the owner, and finally that the apparatus is specially valuable because with it the coal can be delivered on opposite screens with equal facility. In brief, that, it combines simplicity, durability and economy.



ANNUAL REPORTS

OF THE

STATE INSPECTORS OF MINES

1885.



FIRST DISTRICT.

EMBRACING GRUNDY, KANKAKEE, LASALLE, LIVINGSTON,
AND WILL COUNTIES.

ALEXANDER RONALD, STREATOR, *Inspector.*

MR. JOHN S. LORD,

Secretary of the Bureau of Labor Statistics of Illinois:

SIR—In compliance with the requirements of the law, I herewith submit my second annual report of the First Inspection District of the State.

GRUNDY COUNTY.

BRACEVILLE MINES.

At the Braceville mines, which are the largest and most important in this county, I found that various improvements had been made since the last report. At shaft No. 2 the roadways have been repaired, and the use of powder has been abandoned, which renders the air clearer and purer. Considering the obstacles that have been overcome, this mine is in very good condition.

At No. 3 the fan has been remodeled and larger blades put in, increasing the volume of air 12,000 cubic feet per minute. It is now next to the best ventilated mine in the district. These mines are located on the Chicago and Alton railroad.

WILMINGTON STAR CO.

Mine No. 1 has had the air shaft enlarged during the year. As first built it was not large enough to supply sufficient air after the stairways were put in. The mine is on the C. & A. and C., St. L. & W. railroads.

STREATOR AND WILMINGTON STAR COAL CO.

This company now have their mines in good running order. They have built a fan during the year, and are preparing to sink another shaft this fall.

SUFFERN BROS., COAL BRANCH JUNCTION.

The air in this mine has been split into four distinct currents, which has greatly improved the ventilation.

WILMINGTON AND SPRINGFIELD COAL CO.

The air in this mine has been improved by splitting the current, and the roadways have been cleaned and repaired.

The Gooldridge Coal Company at Morris have abandoned their mine at that place.

All the small mines around Morris are supplied with escapements and fences around their hoisting shafts. One of the operators refused to comply with the law, and I was forced to threaten him with an injunction before he would make the required improvements.

KANKAKEE COUNTY.

CENTRAL ILLINOIS COAL CO.

The two mines of this company, situated on a branch of the Illinois Central railroad, have been abandoned. On my last visit there I notified the superintendent as to the condition of the roadways, and remonstrated with him about allowing the rooms to cave in and destroy the air current. He promised to make the necessary repairs, but a few days later the mine was abandoned. The company claims to have expended \$70,000 on it without any adequate return, and probably did not feel warranted in putting any more expense on it.

CLARK CITY MINE.

This mine, now owned by Taylor Williams, was formerly the property of the Kankakee Coal Mining Co. There has been an escapement sunk and a fan erected, so that the mine is in a very good condition. It is located on a branch of the Illinois Central, and of the Wabash and Pacific railroads.

WILL COUNTY.

CHICAGO, WILMINGTON AND VERMILION COAL CO.

This company has sunk a new shaft this summer at Braidwood. They had their escapement down and the fan erected before beginning to mine coal. This was very commendable and speaks well for

the officials, as showing their readiness to comply with the law. The mine will be operated according to the best methods. The men will be moved from the "H" shaft to the new one as fast as room can be made for them, as the "H" shaft had become too extended for the volume of air.

The "I" shaft was abandoned last spring. The company posted notices warning the men not to enter the mine in the event of the prairie becoming flooded with water from the melting snow of the winter. They afterward decided to close the mine and take out all the valuable material they had in it.

ALBRIGHT AND WILMINGTON COAL CO.

"A" shaft. A fifty foot chimney has been built to enlarge the ventilating capacity of this mine, and this with the improvements made in the airways has kept the air in very good condition. The company is building a fan, which will be running very soon.

"B" shaft has been abandoned.

LaSALLE COUNTY.

CHICAGO, WILMINGTON AND VERMILION COAL CO.

There has been an additional fan erected during the year at No. 2 shaft of this company, making two now in operation at this mine, with two upcast shafts.

There are also two fans and two upcast shafts at No. 1 mine, and both mines are in good condition.

COAL RUN Co.'s MINES.

No. 2. This mine has been abandoned because it could not be made to pay. This is the mine that gave off so much fire-damp. This gas escaped so freely that it could be found in cavities where fragments of the roof had fallen out, with the air traveling at a velocity of 600 feet per minute immediately below it.

No. 3. The fan at this place is now run at a very high rate of speed, and another air shaft is being sunk, which will cut off half of their air-way, giving the air only half the distance to travel, besides bringing it to the men direct from the surface, instead of going past the old workings before it reaches them.

RIVER BANK COAL CO.

This company has erected a fan for ventilating purposes, but on going to the mines on two separate occasions, I found the fan standing still and the men in the mine. I made a protest to the officials both times, but no attention was paid to it. I then filed information with the State's attorney to prosecute them. They were summoned before the grand jury at the spring term, but the miners

were unwilling witnesses and shielded the company as much as possible. The consequence was the case was dismissed, but the fan was afterward kept running.

STREATOR COAL CO.'S MINES.

Shaft No. 1 of this company has been abandoned.

At No. 2, now Luther & Tyler's mine, a new fan has been built. This is a small mine, and will soon be worked out. It is now within 34 feet of the workings of an old mine which are filled with water, but bore-holes are kept in advance of the workings approaching it.

All the mines from which coal is shipped, in the vicinity of Streator, are located so as to have easy access to the following railroads, and more or less business is done with all of them: The Chicago, Burlington and Quincy, Chicago, Alton and St. Louis, Chicago, St. Louis and Western, Wabash, St. Louis and Pacific, and Indiana, Illinois and Iowa.

ROCKWELL SHAFT.

This mine has had a new fan erected of the Champion pattern, and the air is now good and the roadways safe.

OGLESBY COAL CO.

This mine has had the air split into two currents during the past year, which has increased the volume, and I have the superintendent's promise to build a new fan, and put a more powerful engine on it.

JAMES CAHILL'S MINE.

This mine has had a fan of the Champion pattern put on in place of the old one.

UNION COAL CO.

This company has put a tension wheel on the fan belt, and also a governor on the engine. The valve is now opened next to the boilers, so that the engine keeps up a uniform speed. The air is also split in the No. 2 seam.

LIVINGSTON COUNTY.

H. E. HAMILTON'S MINE, FAIRBURY.

This mine, formerly Porter, Wager & Co.'s, has been abandoned.

FAIRBURY COAL MINING CO.

This is the result of a combination effected between Mr. Hamilton and the Walton Brothers, whereby the old shaft of the former is closed and the entire business of the place transferred to the Walton Brothers' shaft, the capacity of which is correspondingly enlarged.

W. H. LEVERS' MINE.

This mine, located at Pontiac, was found running last fall, but the operators had abandoned seam No. 5 and commenced developing seam No. 2. They asked for time to sink an escapement, claiming that the new works should be construed to be a new mine, as the miners were working close to the bottom of the shaft. They put on new cages and covered them with boiler iron. The present shaft is in rather poor condition. The proprietors have been trying to organize a company to operate it, but have not succeeded as yet. The prospect is not a very promising one, the shaft being down on a fault, and an escapement being necessary. It would require quite an outlay of money with not much prospect of an adequate return. On all my visits to the place, except one in the fall, I have found it closed, and have failed to discover any one who was interested in it. I could not get any account of the production, which is small, not exceeding a few hundred tons, so I have dropped it from the list.

STAR COAL CO.

The mine owned by this company has had the circuit of the air course reduced nearly one-half by getting a connection with an abandoned mine. This brings the air direct to the miners, which is a very great improvement.

ALEXANDER HELON'S MINE.

I was obliged to file information against the owners of this mine for refusing to make good roadways to the escapement shaft. It was nearly filled with water, so that the miners could with difficulty get through it, and it also reduced the air current by lessening the area of the air-way. He afterward built a roadway through an abandoned mine, so the suit was withdrawn.

CHICAGO, WILMINGTON AND VERMILION COAL CO., No. 3 SHAFT.

This is a new mine, and appears for the first time in a report of the district. Its plan of ventilation is good. The air, after supplying each pair of entries, is taken to the upcast shaft, which is ventilated by a fan of an entirely new pattern. This is driven by a powerful engine, with a 12x16 inch cylinder.

REMARKS.

The mines not mentioned here remain in about the same condition as last reported, except the Rutland mine, which was standing for a while, but was found to be in operation this summer, employing two men and a boy. On visiting it I found it to have no escapement shaft, and at once filed information for an injunction, but nothing has been done about it yet.

There have been no strikes in the district during the year, except one at Streator which lasted a month. It was occasioned by the operators making a reduction of five cents per ton for mining the coal. The miners were about equally divided on the question, some being willing to accept the terms, and others holding that it was unjust. After the first three weeks the men were notified that a reduction of ten cents per ton would be demanded, but this had no effect except to further irritate them, and the strike continued until the first of May, when it was learned that the Braidwood miners had accepted a rate of five cents less per ton, when the strike ended with the men accepting the terms first offered them. The strike was quiet and orderly; no violence nor intimidation of any kind was offered, and no black-listing or victimizing was resorted to by the company after settlement.

The mines located south of Streator—Maon's, Barrackman's, Edwards' Fairbairn's, and Mallory and Evans—have had a switch brought in from the Chicago, St. Louis and Western railroad to the mines, so that they will appear in the next report as railroad mines. They have been erecting hoisting towers, and are going to put in engines. They have also changed from the system of single entry to that of double entry.

The feeling existing between operators and miners seems to be generally friendly, but the one common complaint on all sides is that it is constantly becoming harder to make both ends meet. The proprietors claim that there is no money to be made in the coal business, and that every year their profits are smaller and they are less able to make the necessary improvements, while the miners complain that each year it is harder to live, that the prices for mining are gradually becoming lower, and the work has to be divided among a constantly increasing number of men.

I have been over the district three times during the year, and have had no trouble with either operators or miners. The proprietors generally are willing to fulfill the requirements of the law, and intelligent miners recognize that improvements and remodeling of old mines to bring them up to the standard, must necessarily be slow work, and oftentimes involve a heavy expense, and when they see that improvements are steadily going on, they are satisfied.

Very respectfully,

ALEXANDER RONALD,
Inspector 1st District.

FATAL ACCIDENTS.

John Springborn was killed by a fall of coal at No. 1 shaft of the Illinois Valley mines, Feb. 7. He neglected to put in sprags to keep the coal safe until he got it undermined. The result was the coal came over on him, killing him instantly. He leaves a widow and four children.

David Brown, a boy aged 15, was killed at No. 1 shaft of the Wilmington Star Mining Co. at Coal City, April 10. The father and two sons were coming up the shaft after their day's work, and got off at the lower landing, the youngest son getting off on the wrong

side, into the prop room, which was locked. On discovering his mistake, he tried to cross to the other side, but the cage had started, and he was caught by the gate and thrown down the pit, killing him instantly.

At the "H" shaft of the Chicago, Wilmington and Vermilion Co., at Braidwood, Dec. 17, Marinio Perania, aged 26, was killed while attempting to get on the cage after it had started down. It was after seven o'clock, and the hoisting had begun. Four men at the top signaled to be taken down on an empty cage, and after they had started Perania made a dash for the cage and was caught with the top, and thrown down the pit. He leaves a widow but no children.

On April 20, at the River Bank mine, Streator, Thomas Bailey, 35 years old, a married man with three children, was killed by a falling roof. He was getting the place ready to set a prop, when the rock came down on him, killing him instantly.

At the Union Coal Co., Peru, Oct. 6th, John Kline, aged 20, unmarried, was killed by falling down the shaft. He was coming up in the cage, and when within thirty feet of the top lost hold of his dinner bucket, and in his efforts to recover it lost his balance and was thrown to the bottom of the pit.

At the same place, on Feb. 20, Dennis Barry, a married man, 65 years old, was killed by a stone falling on him while working at the face. The stone was not large, but owing to his age he was unable to survive the shock, and died the same night.

Adolph Keep, 63 years old, was killed at the James Cahill mine, at Peru, on Nov. 15. A stone fell out at a slip, striking him on the head and back, while working in his room. He died next morning, leaving a wife but no children.

Michael Dalaney, aged 35, a married man with 3 children, was killed at the Eagle shaft of the Coal Run Co., at Streator, Feb. 6th. While working at his room face, a large stone came down on him, crushing him so severely that he died the next morning. His partner in the room said they had no idea the roof was unsafe.

NON-FATAL ACCIDENTS.

At shaft No. 2 of the Illinois Valley Co., at LaSalle, on April 1, Mr. John McSparrow, a single man, aged 24, was injured by a fall of coal, which came over on him and bruised him quite severely about the head. He was idle one month.

On June 29, at the "I" shaft of the Chicago, Wilmington and Vermilion Co., at Braidwood, Samuel Weir, aged 27, father of two children, was slightly injured by a stone falling on his leg and breaking a small bone in it. He lost one month.

At the "H" shaft of the same company, on December 24, G. Crumpio, single, aged 22, was injured by the falling of a roof in his room. No bones were broken, but he was unable to work for two weeks.

At the Union Coal Co.'s mine, at Peru, on January 21, Thos. Flannery, unmarried, aged 18, had his arm broken by coal falling on him while he was shovelling from a mining machine. He was idle three months.

On May 30, at the same place, James Conlin, 27 years old, and married, was unable to work for three months from injuries received by rock falling on him while at work in his room.

At the Chicago, Wilmington and Vermilion Co.'s shaft No. 2, located at Streator, on September 4, John Gordon, a single man, aged 21, was slightly injured. While working with a mining machine a fall of top coal came over on him. The room had not been cleared out after the previous mining, and it was strictly forbidden to go into a room with a machine until the coal was all removed.

On January 30, at the same shaft, Morgan Hughes, aged 29, an unmarried man, was injured by being struck by falling rock. On coming out from his work a stone fell on him, crushing across the kidneys. It was thought to be very slight at the time, and he was expected to be at work in a few days, but it seems to be more serious than was at first supposed, and he is not yet able to work.

Samuel Plimmer, aged 19, was slightly injured at the No. 1 shaft of the Chicago, Wilmington and Vermilion Co., at Streator, on December 20. While driving out of a room a stone fell on the car and slipped off, striking him on the back, and bruising him so he was unable to work for five weeks.

On March 21, at the same mine, Charles Devine, aged 16, received injuries which caused him to lose four months' work. He fell before his car and the mule pulled it on him, breaking his leg above the ankle.

At the same mine, on January 22, Henry Beard, a married man 49 years old, was badly hurt while putting a car on the cage. The ground was frozen and the car would not go into place. He tried to kick it, and missing it he fell, and his foot getting through the side of the cage and caught in the tail rope, was so badly crushed that amputation was necessary. He was idle four months.

At the Oglesby mine, September 23, Max C. Bazley, single, was injured by falling. He was engaged in sending slack from the lower to the upper landing, and while the cage was going up he pushed a car into the shaft, thinking the cage was standing, and was hurt himself.

At the Eagle shaft of the Coal Run Co., March 7, Walter Bramley, 19 years of age, was slightly injured. While driving out a loaded car it went off the track and crushed him so he was unable to work for two weeks.

James Hunter was slightly burned by an explosion of gas at the Peanut shaft of the above company on March 24. He was warned of the danger in the morning and given a safety lamp, but after using it a while he lighted his open lamp and set fire to the gas.

At the Gardner mine, on September 30, four men, all single—James Nash, James Bailey, Wm. Henderson and Thos. Kerrigan—received injuries while descending the shaft. When they wanted to

go down to work in the morning, the regular engineer was busy at another piece of work, and George Cummings, the pump tender, undertook to let them down. When near the bottom he tried to check the cage, but he pulled the lever the wrong way and landed them at the bottom at a high rate of speed. Two of them claim to be severely hurt and have commenced suit for damages, but the other two were only idle one day.

At the same mine, on June 25, Chas. Dahley, aged 32, was slightly hurt by a premature discharge of a dynamite blast, caused by carelessness. He lost only two days.

At the mine owned by Mr. Taylor Williams, at Gardner, on March 5th, Elijah Cook, unmarried, aged 25, was hurt by a fall of brushing. His ankle was fractured and his head cut. He was unable to work for six weeks.

At No. 3 shaft of the C., M. & St. P. Co., at Braceville, Joseph Broncka, 22 years old and unmarried, was bruised on the leg by a falling rock. Idle two weeks.

At the same mine, John B. Roberts, married, had his shoulder dislocated by a fall of stone and lost six weeks' work.

On February 14th, at the above mine, Robert Makepeace, 18 years old, mule driver, received injuries which laid him up for three weeks. While driving out his trip he fell in front of it, and was found under the first car with his skull fractured.

On the 24th of February, at No. 2 of the C., M. & St. P. mines, Alexander Rodgers, a married man, was hurt in the back. On going back to look at his shot a piece of stone fell edgewise and injured his spine. He is walking but cannot work.

At the same place, May 9th, Wm. Miller, aged 23, had his leg broken by a stone which fell while he was setting a prop.

Alexander Brown, aged 27, had his ankle dislocated by a stone falling on it while he was working in his room at the Wilmington Mining Co., at Braidwood. He was idle six weeks.

At the same place, on April 10, Andrew Malcolm was hurt while timbering a new parting. A stone fell and knocked out a prop which struck him on the head rendering him insensible. He lost one month.

David Frew, aged 33, broke his leg June 5th, while trying to stop a car which the driver had allowed to get away.

At the Star Coal Co.'s mine, Streator, March 18, John Salavana, 25 years old, had his foot crushed by a fall of rock in his room. He was idle three weeks.

At the "I" shaft of the Chicago, Wilmington and Vermilion Coal Co., at Braidwood, on the 4th of February, James Rush, a married man, 32 years old, had his foot crushed by a falling stone in his room. No bones were broken. He was idle one week.

At the same place, on May 5th, Jahn Fugliero, 29 years old and married, had his ankle broken by falling stone at the face of his room. He is still idle.

At the "H" shaft of the Chicago, Wilmington and Vermilion Co., on May 7th, Booney Ileson, aged 35, was bruised about the shoulders by stone falling on him while at work in his room.

At a mine in Streater belonging to the same company, on June 6th, James Farrington, 43 years old and married, had his leg broken. A stone fell on him as he was coming from work. He saw it in time to avoid it, but tripped and fell and it caught his foot, breaking the bone above the ankle. The stone was marked to be taken down, but owing to the shaft being idle there was no roadsman at work.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.							
		Drift, slope or shaft.....	Steam, horse or hand-power.....	Thickness of coal—feet and inches.....	Geological No. of seam.....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd		No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
									Summer.....	Winter.....							
C. M. & St. P. R. R. No. 2	Braceville....	Shaft,	Steam.	115 3-6	2	L., W.	2	Fan..	360	390	212	41	4	1	\$0 90	\$194,176	\$1 40
Wilmington Star Coal Co. No. 1.....	Coal City.....	"	"	123 3	2	"	3	"	220	270	209	75	1	4	90	142,869	1 40
Wilmington Star Coal Co. No. 2.....	"	"	"	115 3	2	"	2	"	8	60	182	90	1	1	90	99,200	1 43
Wilmington Mining and Mfg. Co. No. 3.....	Braidwood....	"	"	103 3	2	"	2	"	90	100	201	20	3	3	90	110,940	1 50
Taylor Williams Gardner.....	"	"	"	180 3	2	"	2	"	60	75	240	360	6	6	90	24,751	1 50
Eureka Coal Co. No. 4.....	Braidwood....	"	"	127 3	2	"	2	"	90	125	243	85	1	1	90	63,467	1 50
Wm. B. Suffer & Bros. No. 1.....	Coal City.....	"	"	110 3	2	"	2	"	75	95	203	27	1	1	90	57,307	1 50
Streator and Wilmington Star Coal Co. No. 1.....	"	"	"	103 3	2	"	2	"	90	120	184	7	1	1	90	45,436	1 50
Wilmington and Springfield.....	Braidwood....	"	"	107 3	2	R., P.	2	Fur..	65	85	195	25	1	1	90	28,530	1 50
Henry Burrell & Co. Morris.....	"	"	Horse.	45 3	2	"	2	"	30	50	6	250	1	1	95	2,000	1 80
Alex. Telfer & Co. Healy & Wood.....	"	"	"	54 3	2	"	2	"	7	12	2	240	2	2	96	1,174	1 80
John Buck.....	"	"	"	37 3	2	"	2	"	5	1	200	200	1	1	1 11	2,000	2 50
Frank Gilbride.....	"	"	"	35 3	2	"	2	"	5	1	150	200	1	1	1 30	1,000	2 50
John Steele.....	"	"	"	53 3	2	"	2	"	5	1	145	200	1	1	1 30	800	3 00
Alex. Bell.....	"	"	"	40 3	2	"	2	"	2	3	1	150	1	1	1 30	250	2 50
William Ferguson.....	"	"	"	32 3	2	"	2	"	2	1	143	150	1	1	1 30	300	2 50
Lars Tharsan.....	"	"	"	60 3	2	"	2	"	2	1	70	100	1	1	1 30	100	2 50
William George.....	"	"	"	35 3	2	"	2	"	3	1	80	150	1	1	1 30	90	2 50
George Blairs.....	"	"	"	27 3	2	"	2	"	3	1	150	150	1	1	1 30	741	2 50

Grundy County—Continued.

Name of firm, company or individual oper- ating mine.	Town or post- office nearest the mine.	Capital em- ployed.	CHARACTER OF PLANT.					EMPLOYES.					PRODUCT.							
			Drift, slope or shaft.....	Steam, horse or hand- power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd	Winter	Summer.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time)....	Price per ton paid for mining.	Winter	Summer.....	No. of tons of coal pro- duced.....	Average value of coal per ton at the mine.....
Lee Martin.....	Morris.....	\$500	Shaft.....	Horse.....	36	3	2	R. P.....	2	Fur.....	4	16	190	.....	.....	.....	\$1 00	\$1 30	\$1,800	2 50
T. Walsh.....	"	800	"	"	25	6	"	"	1	"	.....	6	140	.....	.....	.....	.....	1 30	920	2 50
W. Hornsley.....	"	500	"	"	40	3	"	"	8	"	.....	8	135	.....	.....	.....	.....	1 30	700	2 50
James Cummings.....	"	300	"	"	25	3	"	"	1	"	3	6	135	.....	.....	.....	1 20	1 30	650	2 50
Totals		\$462,900							558		1,400	1,772	4,491	1,010	1	14	\$ 90	\$1 00	\$793,424	\$1 46

LaSALLE COUNTY—1835.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.							EMPLOYES.				PRODUCT.				
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.	Thickness of coal—feet and inches	Geological No. of seam...	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
										Summer.....	Winter							
C. W. & V. Coal Co., No. 1	Streator	\$50,000	Shaft.	Steam.	110	5-6	7	P-R	3	Fan.	320	205	1,500	4	4	\$0 75	224,865	\$1 30
Coal Run Coal Co., Eagle Shaft	"	25,000	"	"	54	5-6	7	"	3	"	144	202	500	1	1	"	131,007	1 30
Luther & Tyler Coal and Coke Co., Streator.....	"	10,000	"	"	50	5-6	7	"	"	"	100	225	250	2	2	75	61,000	1 35
River Bank Coal Co.....	"	30,000	"	"	74	5-6	7	"	"	"	90	150	120	"	"	75	38,878	1 35
Fred. W. Eades.....	"	12,000	Drift.	Horse	56	5-6	7	"	"	Fur.	6	180	32	"	"	80	30,633	1 50
Lukins & Kavanaugh.....	"	7,000	"	"	"	5-6	7	"	"	"	13	246	27	"	"	85	7,715	1 50
Jas. Crewe.....	"	2,000	"	"	"	5-6	7	"	"	"	8	300	18	"	"	75	7,000	1 50
Wm. Howe.....	"	1,000	Shaft.	"	50	5-6	7	"	"	"	9	270	22	"	"	75	2,000	1 75
Peter Howard.....	"	800	Drift.	"	60	5-6	7	"	"	"	"	160	20	"	"	"	2,000	1 75
Burgess & Courtney.....	"	1,500	Shaft.	"	54	5-6	7	"	"	"	30	170	16	"	"	85	1,600	1 75
John Scott.....	"	1,800	"	"	54	5-6	7	"	"	"	12	150	19	"	"	85	1,900	1 75
J. White.....	"	1,200	"	"	45	9-6	7	"	"	"	2	150	6	"	"	85	2,000	1 75
S. McClairy.....	"	600	Slope	"	15	9-6	7	"	"	"	1	145	"	"	"	85	1,700	1 40
Robert Fairbairn.....	"	500	"	"	25	5-6	7	"	"	"	1	130	"	"	"	75	400	1 75
J. Holdridge.....	Lowell.....	800	Shaft.	Hand	46	3	2	"	"	"	3	130	"	"	"	1 00	453	2 00
Burgess Toll.....	"	700	Slope	"	10	3	2	"	"	"	"	136	"	"	"	1 00	600	2 00
Mathiessen & Hegler.....	Utica.....	40,000	Shaft.	Horse	35	5-6	7	"	"	"	5	310	2,310	"	"	55	875	2 00
LaSalle Co., Carbon C. C.	LaSalle.....	125,000	"	Steam.	350	3-6	2	F-W	2	Fan.	186	240	"	"	"	90	76,911	1 30
"	"	125,000	"	"	390	3-6	2	"	2	"	149	220	"	"	"	90	99,045	1 50
Illinois Valley Coal Co., No. 1 and 2.....	"	125,000	"	"	450	3-6	2	"	"	"	180	230	"	1	1	90	49,802	1 50
Union Coal Co.....	Peru.....	125,000	"	"	400	3-6	2	"	"	"	130	300	2,000	2	2	90	102,000	1 45
James Cahill.....	"	80,000	"	"	380	3-6	2	"	"	"	150	180	290	1	1	77	70,000	1 45

Oglesby Coal Co	150,000	"	"	"	S	"	1	450	3-6	2	L-W	2	Fan	135	100	60	212	12	1	.....	90	90	70,000	1 55
Seneca Coal Co	10,000	"	"	"	"	"	"	127	3	2	"	2	St m.	12	35	4	190	.....	.....	.....	98	1 08	11,164	1 55
P. Shelton	8,000	"	"	"	"	"	"	127	3	2	"	2	Fur	12	23	3	173	.....	.....	.....	98	98	7,640	1 65
B. Davis	800	"	"	"	"	"	"	40	5	7	R-P	2	"	.....	4	4	115	.....	.....	.....	85	85	950	1 60
Emerson Hicks	40,000	"	"	"	"	"	"	285	4	6	"	1	"	1	4	1	200	13	.....	.....	85	95	1,500	2 00
Strippings rear		"	"	"	"	"	"																5,000	2 00
Totals	\$949,300													1,716	2,159	842	5,789	6,976	8	10	\$0 80	\$ 84.5	1,127,674	\$1 41

† The Union Coal Co. is working seams Nos. 2 and 5, the upper seam being mined entirely by machines, the lower by hand; but the whole amount of coal is entered in our total.

‡ Twenty-two Harrison mining machines used in this mine.

LIVINGSTON COUNTY.

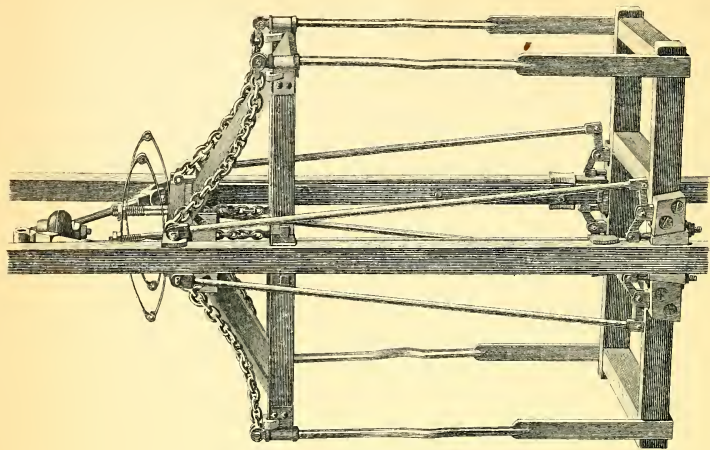
Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.																		
			Drift, slope or shaft	Steam.	72	5	5	7	P. R.	2	Fan.	150	30	249	260	1	No. of men injured (so as to lose time).	No. of men killed during year	No. of kegs of powder used during year.	No. of days worked during the year.	No. of other employees in and about mine.	Number of miners employ'd	Winter.	Summer.	Price per ton paid for minning.	Winter.	Summer.	No. of tons of coal produced.	Average value of coal per ton at the mine.
Star Coal Co. No. 2	Streator	\$25,000	Shaft.	Steam.	72	5	5	7	P. R.	2	Fan.	150	30	249	260	1						180	50	249	260	\$0 75	85	76,290	\$1 35
C. W. & V. Coal Co. No. 3	Fairbury	30,000	"	"	74	5	5	5	"	2	Fur.	24	50	208	260	1						100	30	208	260	75	85	40,402	1 30
Fairbury Coal Co.	Fairbury	30,000	"	"	182	5	5	5	"	2	Fur.	40	18	200	1,870	1						60	18	200	1,870	85	85	31,242	1 50
Alexander Helm, Diamond Shaft.	Streator	6,000	"	"	76	5	7	7	"	"	"	50	12	224	78							70	12	224	78	75	85	13,500	1 35
James Carr, Nos. 1 and 2	"	2,500	"	"	80	5	7	7	"	"	"	12	24	330	30							24	4	330	30	75	85	6,250	1 40
Richard Evans, No. 1	"	5,000	"	Horse.	62	5	7	7	"	"	"	8	30	190	11							30	3	190	11	75	85	4,600	1 50
Jacob Moon, No. 1	"	3,000	"	"	76	5	7	7	"	"	"	"	2	150	15							16	2	150	15	85	85	2,500	1 50
M. Barrackman.	"	1,600	"	"	53	5	7	7	"	"	"	"	8	1	140	9						"	"	"	"	"	"	1,600	1 75
Fairbairn & White.	"	3,000	Drift.	"	35	5	7	7	"	"	"	5	1	140	6							5	1	140	6	87 1/2	85	1,100	1 75
Thomas Edwards	"	1,800	Shaft.	"	57	5	7	7	"	"	"	4	1	130	2							8	1	130	2	85	85	1,900	1 75
Eli Cope.	"	3,000	"	"	50	5	7	7	"	"	"	8		130								30			75	85	5,460	1 50	
Totals		\$110,900										292	122	1,864	2,279	1						527	122	1,864	2,279	\$ 76.7	\$ 86.7	183,844	\$1 38

WILL COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.					EMPLOYES.					PRODUCT.		
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd	No. of men injured (so as to lose time).....	No. men killed during year.	No. of kegs of powder used during the year.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
									Winter	Summer					

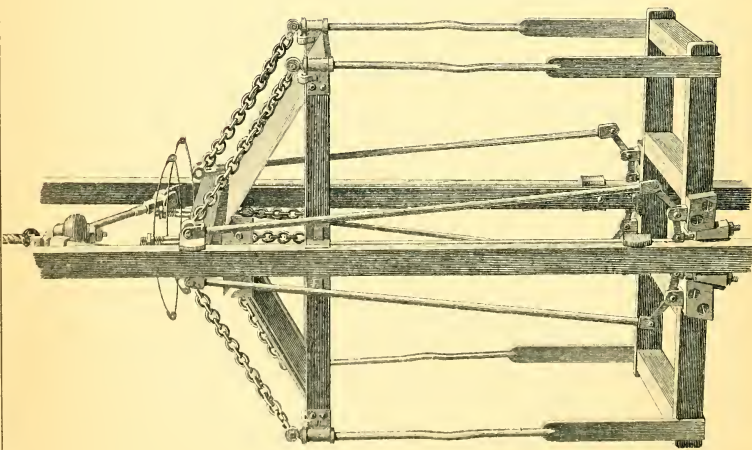
RECAPITULATION BY COUNTIES—FIRST DISTRICT.

[illegible]



CAGE AT REST ON CATCHER

PATENTED BY WM. GILES, MT OLIVE ILLS.



CAGE SUSPENDED

IMPROVED CAGE AND SAFETY CATCH.

GILES' IMPROVED CAGE.

The leading feature of this cage is a new form of safety-catch to arrest the fall of the structure in case the hoisting cable is broken.

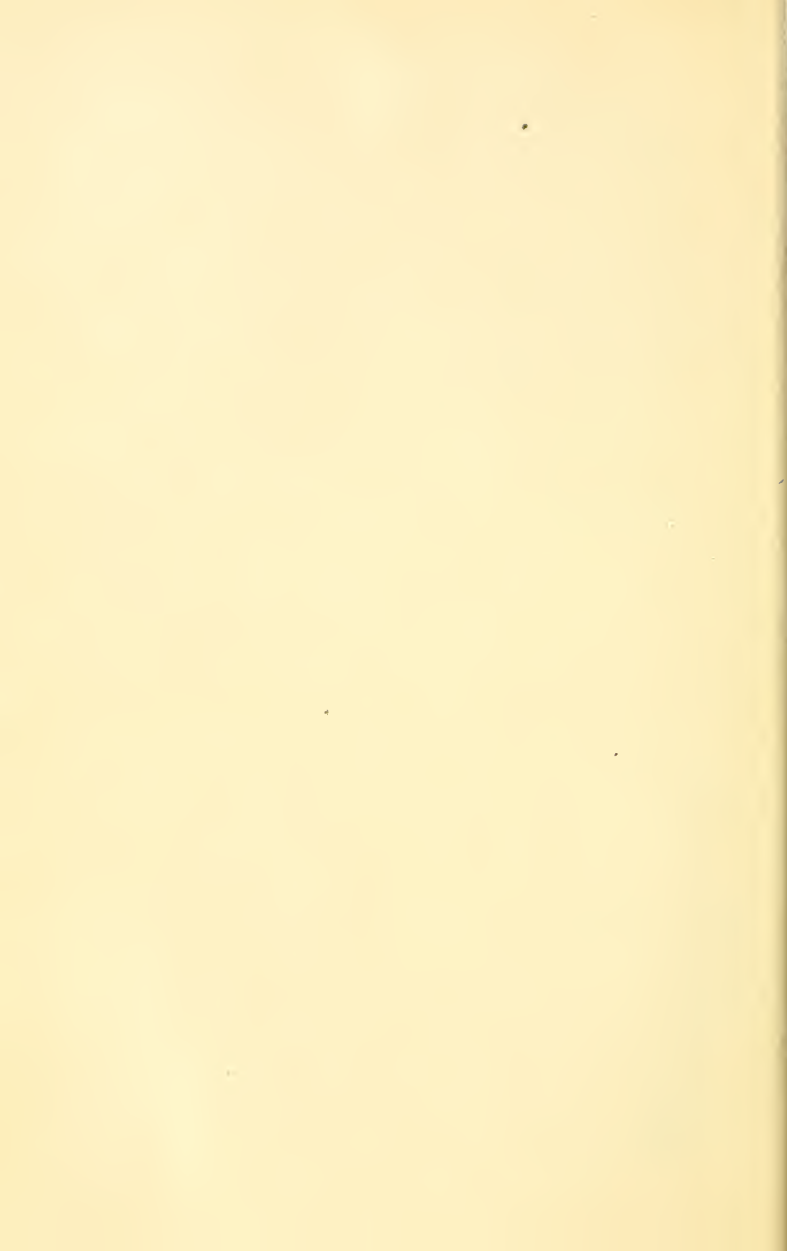
This consists of wedge-blocks, as shown in the cut, operated by elliptical springs acting upon rods connected with the wedge-blocks, in such a manner that when the tension of the suspending cable is relaxed the wedge blocks are thrust into position against the sides of the guides, and the cage is thus firmly and instantly locked in its place. When the cage is suspended the springs are compressed and the wedge-blocks are thrust slightly downward and held clear of the guides, admitting of the free movement of the cage up or down. When the cable breaks the springs expand, forcing the cross-beam down, and the rods connected with it act at once upon the wedges, throwing them up into position and locking the cage against the guides.

A downward pressure on the cross-beam of only two and a half inches effects this result, and the action is instantaneous and unfailing. The grip surface of the wedge is so great there is no danger of tearing up the guides or injuring the shaft in any way. The springs are out of the way of men on the cage, and always in action, and can not become inoperative through rust or disuse.

The advantages claimed for the cage itself consist of a combination of lightness and strength in its construction, and in the ready adjustability of the boiler-iron covers.

These covers are hinged on rods to the cross-beam, leaving the lower edges supported on stirrup-rods. These can readily be removed, allowing the covers to drop, and thus permitting the loading of timbers, props or other material requiring the removal of the covers. This arrangement also admits of the easy removal of the covers altogether, in case they become bent or otherwise in need of repairs.

The cage is constructed without bolts, rivets or screws in those parts which sustain the load, and is suspended from the four corners, and requires no braces, as the weight of the structure performs that function.



SECOND DISTRICT.

EMBRACING BUREAU, HENRY, HANCOCK, KNOX, McDONOUGH,
MERCER, MARSHALL, ROCK ISLAND, STARK, SCHUYLER,
AND WARREN COUNTIES.

THOMAS HUDSON, GALVA, *Inspector.*

Mr. JOHN S. LORD,

Secretary of the Bureau of Labor Statistics of the State of Illinois:

SIR—In accordance with the twelfth section of an Act, providing for the health and safety of persons employed in coal mines, in force July 1, 1883, I have the honor of submitting to you herewith my second annual report as Inspector of Coal Mines for the Second District, for the year ending June 30, 1885.

The matter contained therein consists of the usual tabulated statements relating to the amount of capital employed in the mining industry of the district; number of acres of coal land controlled by the different companies; number of mines, miners and other employés; the kinds of openings and the power used thereat for raising the coal, and the system of mining the same; the number of days worked, and the amount of powder used; the number of accidents, fatal and non-fatal, with detailed account of the causes thereof; the number of tons of coal produced; the price per ton paid for mining, and the value of the coal per ton at the mines; the depth of the different shafts; the thickness and geological number of the various seams, and the different kinds of motors in use for ventilating purposes. The report contains much that ought to be interesting and useful to the miner, operator, and general public, as well as valuable to the statistician.

The following is a statement of the number of employés, the number of tons of coal produced, and the number of casualties, fatal and non-fatal, with the ratio of the number of tons of coal produced and the number of persons employed for each fatal and non-fatal casualty, for the year ending June 30, 1885.

Number of employes—miners.....	2,794
Other employes in and around the mines.....	597
Total number of employes.....	<u>3,391</u>
Number of tons of coal produced.....	<u>724,077</u>
Number of accidents fatal.....	2
Number of accidents non-fatal.....	31
Total number of accidents.....	<u>33</u>
Number of employes to each fatal accident.....	1,695
Number of employes to each non-fatal accident.....	<u>109</u>
Number of tons of coal produced for each fatal accident...	362,038
Number of tons of coal produced for each non-fatal accident	<u>23,357</u>

This ratio is based on the number of employes in winter, when a greater number by far are employed than during the summer months.

The following is a comparative statement of the number of employes, number of tons of coal produced, number of casualties, fatal and non-fatal, with ratio for years ending June 30, 1884 and 1885.

Years.	1884.	1885.
Number of employes.....	3,616	3,391
Number of tons of coal produced.....	723,146	724,077
Number of casualties—fatal.....	6	2
Number of casualties—non-fatal.....	19	31
Number of employes to each fatal accident.....	602	1,695
Number of employes to each non-fatal accident.....	190	109
Number of tons of coal produced for each fatal accident.....	121,357	362,038
Number of tons of coal produced for each non-fatal accident	38,323	23,357

The larger mines in the district have been visited from two to five times, and the smaller mines once during the year.

I have had the assistance of three county Inspectors, namely: Fryar Jobling, Tiskilwa, Bureau county; Isaac Pyle, Kewanee, Henry county, and Thomas Richards, Colchester, McDonough county. The smaller mines in their respective counties have been under their special charge.

Very respectfully,

THOMAS HUDSON,

Inspector 2d District.

FATAL ACCIDENTS.

Accident No. 1.—September 8, 1884. William Reece, a coal operator and miner, aged 38 years; married; leaves a widow; lost his life by inhaling carbonic acid gas, generally known as *black damp*, at or near the bottom of his coal shaft, located three miles east of Wataga, Knox county.

Deceased had abandoned the mine for the summer, (a very common practice with mines of this class), intending to operate it again for the fall and winter trade. On the morning of September 8 he went to his shaft for the purpose of hoisting the water, about three feet of which had accumulated in the mine; toward noon his gin horse was found alone at the shaft and Reece was missing. An alarm was raised at once, and after two hours' effort to clear the mine of "black damp," the deceased was found close to the bottom of the shaft. The supposition is that Reece went down the shaft, which is only twenty feet in depth, and supplied with ladders, to ascertain how much water was in the mine, and was overcome before he reached the bottom. When the mine was visited, three days after the accident, a light ceased to burn twelve feet from the top of the shaft. Had the customary precaution of lowering a lighted lamp into the shaft been taken at first, this accident need not have occurred.

The pillars were taken out after the accident and the mine is now abandoned.

Accident No. 2.—November 25, 1884. Alexander Dunlap, a miner, aged 21 years; single; was killed by falling down a shaft which was being sunk by James Thompson, near Henry, Marshall county. Deceased was engaged as top-man, and the sinkers—two in number—had just fired a blast in the bottom, and were waiting in a shanty near the shaft until the powder smoke should clear away. Dunlap went onto the pit-head to arrange the bucket in which the loose dirt was hoisted from the bottom of the shaft. Through some means he stumbled and fell to the bottom, a distance of forty feet. When taken out he was unconscious and died shortly after.

NON-FATAL ACCIDENTS.

No. 1.—August 12, 1884. Joseph Somers, miner, age 31 years; single; had his leg broken by a fall of the roof, in the Wenona Coal Co.'s mine, located at Wenona, Marshall county.

No. 2.—September 3, 1884. Joseph Hilton, miner, age 32; single; had his back injured by falling in the sump in the Colchester Coal Company's mine, Colchester, McDonough county.

No. 3.—September 6, 1884. John Miller, miner, age 54; married; was injured by a fall of roof in the Coal Valley Coal Co.'s mine, Cable, Mercer county.

No. 4.—September 12, 1884. Thomas Smith, miner, age 17; single; was burned on the face and body by an explosion of powder, caused by drilling out a blast that had missed fire, in John Hill's mine, Princeton, Bureau county.

No. 5.—October 1, 1884. James Miller, miner, age 16; single; had his back injured by a fall of the roof, in the face of the working room, in the Quincy Coal Co.'s mine, Colchester, McDonough county.

No. 6.—November 4, 1884. James Casey, top-man, age 26; married; had his leg broken by falling from an elevated dirt dump, at the Wenona Coal Co.'s mine, Wenona, Marshall county.

No. 7.—December 9, 1884. Andrew Green, miner, age 29; married; had his leg and side bruised by a fall of roof, in the Coal Valley Coal Co.'s mine, Cable, Mercer county.

No. 8.—December 17, 1884. Charles Cook, miner, age 28; single; was injured in the back by a fall of the roof in the face of the room, in Newland's mine, Tennessee, McDonough county.

No. 9.—December 23, 1884. Joseph Stephens, miner, age 50; married; was bruised by a fall of coal in the face of the room, in the Coal Valley Coal Co.'s mine, Cable, Mercer county.

No. 10.—December 30, 1884. Jasper Hammond, miner, age 23; single; was injured by a fall of the roof in the face of the room, in Bass' mine, near Toulon, Stark county.

No. 11.—January 2, 1885. Mark Thompson, miner, age 30; married; had his leg injured by a fall of the roof in Coal Valley Coal Company's mine, Cable, Mercer county.

No. 12.—January 3, 1885. William Howarth, miner, age 55; married; was injured slightly by sliding down the hoisting rope in James Higby's mine, Wyoming, Stark county.

No. 13.—January 5, 1885. Walter Brown, miner, age 30; single; had his leg broken by a fall of the roof in Coal Valley Coal Co.'s mine, Cable, Mercer county.

No. 14.—January 5, 1885. John Walsh, miner, age 30; single; had his eye injured by a "blown out" blast, in Spring Valley Coal Company's mine, shaft No. 1, Spring Valley, Bureau county.

No. 15.—January 8, 1885. William Larson, miner, age 45; married; was injured in his back by being caught under a descending cage, in Herdien Coal Co.'s shaft No. 4, Galva, Henry county.

No. 16.—January 29, 1885. William Boyd, miner, age 30; married; had his foot injured by a fall of coal in the face of the room, in the Quincy Coal Co.'s mine, Colchester, McDonough county.

No. 17.—February 2, 1885. George Griffin, miner, age 22; single; was injured by an empty coal car falling on him, in Silvis Bros.' shaft, Carbon Cliff, Rock Island county.

No. 18.—February 15, 1885. William Swan, miner, age 17; single; had his ankle broken by being caught under the cage, in Thomas Swan's shaft, Monmouth, Warren county.

Nos. 19 and 20.—February 26, 1885. Joseph Murial, age 27, married; and Christopher Gibson, age 25, single; both miners; were slightly injured by a blast blowing through the pillar that separated their room from the room adjoining, in Woodbury's mine, near Carbon Cliff, Rock Island county.

No. 21.—March 11, 1885. Eric Plym, miner, age 40; married; had his back injured by a fall of the roof in the face of the room, in Herdien Coal Co.'s shaft No. 4, Galva, Henry county.

No. 22.—March 12, 1885. Sam Burton, miner, age 40; married; was hurt in the back by a fall of the roof, in Egerton's mine, Colchester, McDonough county.

No. 23.—March 12, 1885. Alfred Larson, miner, age 18; single; had his back injured by being caught under a descending cage, in Herdien Coal Co.'s shaft No. 1, Galva, Henry county.

No. 24.—March 20, 1885. Peter Doherty, miner, age 30; married; bruised by a fall of the roof, in Coal Valley Coal Co.'s mine, Cable, Mercer county.

No. 25.—April 11, 1885. Edmund W. Howe, miner, age 24; married; had his back injured by a fall of the roof in the face of the room, in Bradbury & Co.'s mine, Prairie City, McDonough county.

No. 26.—May 27, 1885. Robert Otis, driver, age 21; married; had his leg broken by being caught under a pit-car, in Lathrop Coal Co.'s shaft No. 6, Kewanee, Henry county.

No. 27.—May 28, 1885. Elisha Beadle, coal operator and miner, age 58; married; had his back and leg injured by a fall of the roof, while engaged in timbering the main entry in Beadle's mine, near Buda, Bureau county.

No. 28.—June 1, 1885. John Wicks, miner, age 25; married; had his spine severely injured by a fall of the roof near the face of the working room, in the Sheffield Mining Co.'s mine, Sheffield, Bureau county. This is a very serious accident, and may have a fatal termination.

No. 29.—June 6, 1885. Andrew Kent, miner, age 45; married; had his foot injured by a fall of coal in the face of the working room, in the Quincy Coal Co.'s mine, Colchester, McDonough county.

No. 30.—June 6, 1885. James Garbett, miner, age 43; married; was hurt in the back by a fall of the roof, in the face of the working room, in Edgerton's mine, Colchester, McDonough county.

No. 31.—John Erskine, miner, single; had his arm injured by a fall of the roof, in Taylor William's mine, Rapids City, Rock Island county. The date of the accident, and the age of the man injured were not reported in this case. The injury, however, was comparatively slight, as only two weeks time was lost from the effects of it.

A very determined case of suicide occurred at the Wenona Coal Co.'s mine, Wenona, Marshall county, March 12, 1885. The facts are substantially as follows: Charles Volling, a miner, 23 years of age, unmarried, came to work on the morning in question at the usual time. When he reached the top landing of the shaft—from which the miners descend—a cage load of miners were just in the act of leaving the top on the north cage; Volling placed his tools and dinner bucket at his feet, and without a word to any one jumped over the guards into the south compartment of the shaft; falling a distance of nearly 500 feet before striking the ascending

cage. The engines were reversed, and the south cage lowered gently to the bottom, and with it, the lifeless and mangled remains of Charles Volling. No particular cause can be assigned for the rash act.

Of the thirty-one non-fatal casualties that have occurred during the year, a very large percentage may be classed as slight, the injured men losing from one to four weeks' time; and it is not likely that the injuries sustained in any case will result in what may be termed permanent injury, or incapacitate the injured men from following their usual employment.

To the above rule, I am sorry to have to record one exception, namely, the case of John Wicks, of Sheffield, Bureau county. He is permanently, if not fatally injured, and through his own negligence, as he not only knew that the roof was unsafe, but had been requested to secure it. The request was unheeded with the above result.

Recapitulation of Fatal Accidents for years ending June 30, 1884 and 1885.

	1884.	1885.
Falling of roof and coal.....	5	0
Machinery on the surface.....	1	0
Falling down shafts.....	0	1
Inhaling carbonic acid gas.....	0	1
Totals.....	6	2

Non-fatal Accidents.

	1884.	1885.
Falling of roof and coal.....	14	19
Caught by pit cars.....	2	2
Blasts of powder, premature or otherwise.....	2	4
Cages and machinery underground.....	1	3
Miscellaneous.....	0	3
Totals.....	19	31

BUREAU COUNTY.

There has been a slight increase in the production of coal in this county as compared with that given in the last annual report. Said increase is due to the amount taken from the Spring Valley Coal Company's new mine.

As the mines about to be operated by this company, and the product thereof, is certain to occupy a very prominent position in the mining industry of this State in the very near future, a brief outline of their operations and probable intentions will not be out of place in a report of this kind.

The Spring Valley Coal Company owns or controls about fifteen thousand acres of coal land, nine thousand acres of which is located in Bureau county, in the southeast part of township 16 north, range 11 east of the 4th principal meridian. Shaft No. 1 is located four miles west of the city of Peru, near the line of the C., R. I. & P. R. R., from which a branch is built to the mine, a distance of about one-fourth of a mile.

Two workable seams of coal were pierced by this shaft. The first, which is about $4\frac{1}{2}$ feet thick, and is probably No. 5 of the general section, was reached at a depth of about 160 feet from the surface. The second, $3\frac{1}{2}$ feet thick, known as the "LaSalle bottom vein," or No. 2 of the general section, was reached at a depth of 333 feet from the surface; both seams are being developed; large pillars have been left to support the bottom of the shaft, the "holing around" of which, is necessarily slow and tedious work, so that the mine may be said to have just gone into active operation at the present writing.

The shaft is 17 feet long and $8\frac{1}{2}$ feet wide, divided into three equal compartments, one of which is used as an air chamber.

The machinery (this includes everything pertaining to hoisting coal at this mine) is all new and of the most approved kind. The engines are 14 inches in diameter and are 24 inch strokes, working a geared motion, pinions 28 inches, drum 10 feet, and sheaves or pulley wheels $8\frac{1}{2}$ feet in diameter; it has steel ropes $1\frac{1}{4}$ inches in diameter, which have a safe working strength of six tons. The mine is ventilated at present by a 9 foot fan. This will become inadequate as the mine is developed and will be replaced by a larger one as soon as it becomes necessary. The fan engine is 12x20, powerful enough to drive a fan 20 feet in diameter.

Steam is generated by a battery of three single flue boilers, outside shell 50 inches in diameter and 26 feet long, inside flue 20 inches in diameter, longitudinal seams double rivetted. They are supplied with all necessary and usual adjuncts.

Two more shafts are being sunk by this company and will be down early in the fall. Shaft No. 2 is located about one mile north of No. 1, and will be about the same depth, both shafts being located in the valley of Spring Creek, from which the company derives its name. Shaft No. 3 is located $2\frac{1}{2}$ miles northwest of No. 1, and will be deeper than the other shafts, being located on higher ground.

The shafts now being sunk are the same size as No. 1; the machinery, etc., will be similar in every particular.

The present intention of the company is to sink in all eight shafts. This, however, will be regulated by that great factor, which enters into all enterprises of this kind, namely—the demand for coal. It is not likely that the company will develop and prepare to produce more coal than the demand for it will justify.

A town, which will bear the name of Spring Valley, has been located west of shaft No. 1; many houses have already been built and many others are in course of erection. The site is an excellent one, sloping gently south to the Illinois River, from which it is distant about half

a mile. Its proximity, however, to the towns of LaSalle and Peru, with their established interests, mercantile and manufacturing, precludes the possibility of it ever becoming more than an extensive mining village.

A branch from the Chicago and Northwestern Railroad is being built to the mines, commencing at Belvidere, Boone county, and running south to Earlville, where it intersects the main line of the Chicago, Burlington and Quincy road, and crosses the Illinois Central between Mendota and LaSalle.* The most of the coal produced will probably be shipped over this road.

Charles J. Devlin, Superintendent and General Manager.

Michael Murphy, Underground Manager at Shaft No. 1.

LOCEYVILLE.

The mine at this place, owned and operated by George H. Locey, has undergone some important improvements during the year. Especially is this true in regard to the ventilation; the escapement shaft is being used as a downcast and the fan changed to a "blower." By this arrangement the ventilation has been changed from defective to first-class. The engine and boiler house has been rebuilt; it is now roofed and sided with fire-proof material.

Safety catches have not yet been put on the cages, but a set has been ordered that will—it is thought—suit the peculiar construction of the cages. To avoid accidents, however, from the cable breaking, a pair of new ropes are put on every year. The shaft is 300 feet deep. The coal is nearly $3\frac{1}{2}$ feet thick, seam No. 2 of the general section, and is fully up to the standard of excellence usually attained by that seam. It is worked on the long-wall system, and is well adapted to this method of mining. The underground workings are in good condition, and bear witness to good management. If the hoisting machinery and shaft were equal to the capacity of the underground workings, the present maximum out-put could be doubled.

Edward Lewis, Mine Manager.

SHEFFIELD.

The mine at this place, operated by the Sheffield Mining Co., continues to supply locomotives on the C., R. I. & P. R. R. The opening is a slope; the coal is brought to the surface by mules, and the underground haulage is quite extensive. The coal is mined on a kind of "block" system. Entries are driven around a square block of coal, and rooms can be opened from any side of the block. This method is adopted on account of the numerous "clay slips" that run through the coal, making the usual "room and pillar" method impracticable. A furnace is used for ventilating purposes, and the mine generally is in good condition.

A. W. Boyden, Superintendent.

Robert Jones, Mine Manager.

Five other mines are in operation at Sheffield, and two at Mineral. They are all local custom mines, and, as a rule, are in fair condition for mines of this class, and have complied with the most important requirements of the mining law.

PRINCETON.

Five local custom mines are in operation five miles east of this city, and give employment collectively to about fifty miners during the winter months, and in summer from fifteen to twenty are employed. The shafts range from 140 to 200 feet in depth; the coal is $4\frac{1}{2}$ feet thick, and is seam No. 6 of the general section. At four of the mines the coal is raised by horse power, and at one steam power is used. Three of the mines (Hill's, Nichols' and Walton's) are connected underground. Fletcher and Heathcock have each constructed escapements during the year, Heathcock's being 200 feet in depth. Small furnaces are used for ventilation, and the mines generally are in fair condition.

The shaft at Hollowayville, owned and operated by Seaton Bros., is 400 feet deep. The coal is over $3\frac{1}{2}$ feet thick, and is seam No. 2 of the general section. The mining is conducted on the long-wall system, and coal is raised by steam power. The mine is ventilated by a small fan, and is in fair order generally. An escapement shaft was commenced in connection with this mine in 1884, and carried down to a depth of 200 feet, when operations were suspended for the winter. Sinking was resumed this summer and the shaft is now down 375 feet, and has only 25 feet more to go. When this escapement is completed, it will probably be the costliest in the State, considering the amount of coal produced.

A new shaft has been sunk by Elisha Beadle during the year. It is located about three miles northeast of Buda. The shaft is 90 feet deep, the coal $4\frac{1}{2}$ feet thick, and is seam No. 6 of the general section. The mine went into operation in April, 1885. E. Beadle, Manager.

The mine operated by V. H. Weissenburger, on Spring Creek, was closed in July, 1884, for non-compliance with the mining law relating to escapement shafts.

The mine formerly operated by James Wood, northwest of Buda, has been abandoned.

HENRY COUNTY.

The mines in this county show a falling off in the amount of coal produced, of about seventeen thousand tons, compared with the last annual report. This decrease may be attributed to the suspension of A. W. Perry's mine at Briar Bluff, which was closed in February, 1884.

KEWANEE.

The mines operated by the Lathrop Coal and Mining Company continue to be the most important in the county. Shaft No. 6 is

undergoing some very important and necessary improvements. The tail-rope system is used at this mine for hauling the coal to the bottom of the shaft. The engine plane was originally about 1,250 feet long; it is being extended and will now bring the coal a distance of 2,100 feet. A new air and water shaft has been sunk north of the present furnace and escape shaft, as it is considerably deeper than the shaft in which the pumps are now working. The pumps will be moved to the new location. It will be used as a downcast, and will decrease the length of the air-ways at least one-half, thereby increasing the ventilation and greatly improving the sanitary condition of the mine.

Shaft No. 1, operated by the same company, has been run comparatively little during the year; one pair of entries are being driven during the summer, the other part of the mine being closed till fall.

A. B. Ashley, Superintendent.

Jacob Fleming, Mine Manager.

Eight or ten local mines are in operation near Kewanee. The most important in point of production is owned and operated by Barnard Kirby, and is located near the northwest corner of the village limits. The mine generally is in good condition. The shaft operated by William Bates, located about two miles north of the village, is one of the best managed local mines in the district.

Stanley's shaft, located one mile north of town, has been in bad order heretofore, especially in regard to ventilation. Some improvements were made in the air-ways in the spring of 1885, which gave temporary relief. If the system then commenced is carried forward, the future condition of the mine will be much better than the past.

There are several other mines of minor importance in operation around Kewanee during the winter months.

A new shaft has been sunk by Fisher & Lyle, and will be operated during the fall and winter.

CLEVELAND.

The mine at this place, operated by Taylor Williams, continues in good condition. The solid coal is exhausted, nothing remaining but "pillars." As these are being withdrawn the circle becomes smaller, fewer miners are employed, the out-put decreases, and in about eighteen months the Cleveland mine will be finished.

A. S. Cox, Superintendent.

John Milam, Mine Manager.

GALVA.

Five shafts are operated at this place by the Herdien Coal Company. No. 1 shaft is operated for local trade only, and does an excellent business, especially in winter.

Shaft No. 2 is located near the line of the R. I. & P. R. R., and is devoted entirely to coaling locomotives on that road.

Shaft No. 3 is operated for local trade only, and is now closed for the summer.

Shaft No. 4. This is the most important mine in operation at this place, producing nearly as much coal as all the others combined. It is connected by a branch to the main line of the C., B. & Q. R. R., on which the coal is shipped. A ventilating fan, five feet in diameter, has been added to this shaft during the year, and it is giving excellent results.

Shaft No. 5. This shaft is connected by a branch to the R. I. & P. R. R., and the coal raised is shipped thereon. The mine is comparatively new, and air-ways short, and the exhaust from a steam pump has been sufficient for ventilating purposes so far.

These mines are all worked on the double entry system. The cages are supplied with safety catches and iron covers, and the drums supplied with brakes, and the mines generally are in good average condition.

Andrew Sunquist, Supt. and General Manager.

Union Coal Co. This mine is run on the co-operative plan, the miners having stock in the company. The shaft is sixty-two feet deep, and the coal is raised by steam power. The cages are supplied with catches and covers, the mine is worked by double entry, and the equipment generally is in good order.

Joseph Walker, Supt.; Olaf Carlson, Mine Manager.

CAMBRIDGE.

The mine at this place, formerly operated by Goodrich & Burton, has changed owners, and is now owned and operated by George Wictom. The old "friction" arrangement for hoisting the coal has been thrown aside, and spur gearing substituted, the latter being safer and more satisfactory. The shaft is 90 feet deep, the coal is 3 feet thick, and is seam No. 3 of the general section. The mine generally is in good order.

George Wictom, Manager.

ATKINSON.

Four local custom mines are in operation at this point; three slopes and one shaft. The shaft is operated by James Kay, and is forty feet deep. The coal is raised by horse-power, a steam pump being used to take care of the water, which is given off in large quantities in those mines.

The slope operated by John Mowbray is the most important in point of production, and is well managed. The mines are located from two to three miles west of the town. The coal is 3 feet thick, and is seam No. 3 of the general section.

Two mines have been in operation at Hawley, six miles north of Galva, and one at Blossomburg during the winter. The three combined have produced a little over one thousand tons of coal. Special mention is unnecessary. A small local mine has been in operation at Minersville, in Colona township. It was not found till after the mines in Henry county were tabulated, and was therefore omitted.

Some coal has been mined during the winter, at what is known as Aldrich's mine, located on Rock River, about eight miles north of Geneseo. It was visited in April, but the mine was abandoned at that time. Letters have been written to the alleged superintendent of the mine for a statement of the amount of coal produced, number of miners employed, etc., but no answer has been obtained. It is rumored that the property has been sold to parties contemplating rail connection with a branch of the C., B. & Q. R. R., on the opposite side of the river, in which case there may be some future development of this place..

HANCOCK COUNTY.

Six mines were in operation last winter in this county. They are all located from two to three miles south of Augusta.

The firm known as Crain & Williamson, has now become the Augusta Coal Company.

The shaft operated by Crain & Williamson has been abandoned, the condition of the roof being such that mining the coal was nearly impossible. A trial shaft was sunk north of the abandoned one. The coal and roof were found satisfactory. The railroad track has been extended to that point, and a new shaft is being sunk. The trial shaft will be used as an escapement. The coal will be raised by steam power, and mining on a comparatively large scale will be carried on.

The shaft sunk during the year by Newcomb & Compton is opened out by double entry system. Cages have been put in, and the outfit generally is good. An escapement is being constructed.

The shaft operated by Sam Jones is in fair condition, and a good business was done during the winter.

The mines operated by O. P. Leach and J. B. Dunant remain in their usual fair order. These mines will have to be exhausted on the old method of hoisting coal, the shafts being too small to admit of cages.

The drift operated by John Christian is closed for the summer—if not permanently,—the coal being nearly exhausted. The coal at Augusta is two feet six inches thick, and is probably seam No. 2 of the general section.

KNOX COUNTY.

The coal produced in this county continues to be consumed within the county limits.

Forty-six mines, with an output of between forty-four and forty-five thousand tons, were recorded in the last annual report. The present report shows an increase of five in the number of mines in operation, and an increase of about one thousand tons in the output.

A new shaft has been sunk during the year by the Galesburg Brick and Tile Company. The shaft is seventy feet in depth; the coal is two feet thick, of fair quality when clean, but it has abundance of pyrites of iron—or sulphur—running through it. The number of the seam is mere guess work; it has been tabulated as No. 2 on account of the resemblance to the coal and other conditions of the Abingdon mine. About two feet of the fire-clay underlying the coal is taken out, to be used in the manufacture of brick and tile. The workings are opened out on the double entry plan, and are in good condition. The coal and clay are raised by steam power, a small single engine being used for that purpose. The mine is located about a mile and a half east of Galesburg, and began operations in April, 1885.

Thomas Muir, Mine Manager.

ABINGDON.

This mine has done very little during the year, and has no prospect of doing better until a tile factory is thoroughly equipped and run in connection with the mine. An excellent escapement shaft has been sunk 100 feet in depth. The mine is now closed, and will remain so till fall.

ONEIDA.

Two mines are in operation four miles south of this place, owned by James McGovern and Charles Morgan, respectively. They are both in fair condition as far as that term can be applied to "country banks," and do a good trade in winter.

George Clifford's mine, located about three miles northeast of Oneida, is in good condition, and, in the matter of production, more than doubles any mine in the county.

The mines at Soperville, located from five to six miles north of Galesburg, have done a good business during the winter. Willstead and Essex have added steam pumps to their outfit for the purpose of raising the water, which is produced in large quantities in those mines.

Ross & Woodward finished their old mine in the spring of 1884, and opened a new drift that was exhausted early in 1885, and they are now prospecting for a new opening.

Benjamin Lewis, the operator of a drift mine, has sunk an air and escape shaft during the year.

WATAGA.

The shaft formerly operated by R. M. Campbell has been worked out and abandoned, and a new one sunk. A drift is being opened from an adjoining ravine, to connect with the new shaft for the purpose of drainage; it will also answer for an airway and escapement.

Rodell has finished his old drift and opened a new one.

Lendblom & Fred have opened a new drift. The shaft in which William Reece lost his life has been abandoned.

The other mines at this place (and there are several of them) remain in their usual condition. James Taylor and C. F. Johnson have constructed escapements.

KNOXVILLE.

No material change has taken place in the condition of the mines at this place since last report. The product thereof is devoted to the uses of the people of Knoxville and vicinity, and no more. A new drift has been opened by William Jones, the owner of the tile factory, and the most of the coal produced at this mine will be used in that manufacture.

YATES CITY.

The shaft operated by John E. Furman, at this place, has been abandoned. An old slope has been reopened by Harvey DeFord, and will be operated by him during the coming fall and winter. An escapement shaft has been sunk in connection with it.

A new shaft 22 feet deep, has been sunk by George Bowman, and is now in operation. Cassius Cox has sunk an escapement in connection with his shaft. Conkling's slope has been operated by M. R. Carter during the winter. Dalton's slope is nearly finished. These mines are located about $2\frac{1}{2}$ miles south of Yates City.

VICTORIA AND TRURO.

Fifteen drift mines are located on the south line of Victoria, and the north line of Truro townships. About forty-eight miners are employed in winter, an average of three miners to each mine, and in summer from six to eight miners are employed. The usual method of getting out the coal, is, to open a drift, (the coal is generally "cropping out" in the ravines) and drive it in about 200 feet, open rooms on both sides of the drift, or main entry, drive the rooms as far as convenient, and draw back the pillars and repeat the operation the next season.

There are thousands of acres of excellent coal, from four to five feet thick, in this vicinity. The depth of the coal below the surface will range from forty to one hundred feet; and the land generally is covered with timber well adapted for mining purposes. The raising of water, which is a source of great expense in most shallow mines, could in many instances be avoided in this coal field. Entries could be driven out to the deep ravines which intersect the land in many places, and the advantages of natural drainage obtained. Several surveys for proposed railroads have been made through Victoria, but so far, the railroad itself has not been built.

The shaft on Pope Creek, in Rio township, was abandoned in May, 1884.

McDONOUGH COUNTY.

The mines in this county show a slight falling off in point of production when compared with the last annual report. The decrease in the county may be attributed to the decrease in the output of the Colchester Coal Company's mine, the falling off in each case being nearly equal.

COLCHESTER.

The mines operated by the Quincy Coal Company at this place produce fully one-half of the total amount of coal mined in the county, and are, in regard to equipment, compliance with law and general management, in excellent condition. Five shafts are at present operated by this company. The total product of shaft No. 20 is consumed by locomotives on the Galesburg and Quincy branch of the C. B. & Q. R. R. Shafts No. 21 and 23 are connected underground and will soon be finished. Shafts No. 24 and 25 are also connected underground, and are comparatively new; it may be said that they have just gone into active operation.

In the last annual report it was stated that five acres of coal were taken out with each shaft. This is a mistake; twenty acres are removed through each shaft. The usual method is, to sink two shafts about six hundred feet apart, connect them underground, and remove forty acres of coal with the two openings and then abandon them. These mines are ventilated by furnaces, and are generally up to the standard in that respect. The results obtained, however, by furnace ventilation, in these comparatively shallow mines, are decidedly meagre, when the cost and consumption of fuel is taken into consideration. Small fans, say six feet in diameter, would be more effective, and undoubtedly more economical.

H. S. Osborn, Pres't and Sup't; Thos. Tirrill, Mine Manager.

EGERTON'S MINES.

The mine owned and operated by Wm. Egerton, and known locally as the "steam shaft," is nearly worked out, and will soon be abandoned. A new shaft has been sunk west of the old workings, and is now being operated, the coal being raised by horse power. About twenty-five miners are employed. As soon as the "steam shaft" is abandoned, the machinery will be moved to the new one, and the number of miners, output, etc., increased. An escapement has been made in connection with this shaft during the year. The only means of ventilation at present in use at this mine is the exhaust from a steam pump. While the miners are employed around the bottom of the shaft, the ventilation thus obtained may be ample, but as the workings advance and the air-ways become longer, this method of ventilation becomes insufficient. To overcome this difficulty, plans have been submitted to Mr. Egerton, and he is now at work on a ventilating fan, and expects to have it in operation shortly. This is a new departure for Colchester, and is certainly a step in the right direction.

Wm. Egerton, Superintendent; Robert Entwistle, Mine Manager.

COLCHESTER COAL CO.

This is a new mine which began operations about September 1, 1884. Messrs. Stanton and Stephens have obtained a lease of the mine and it is at present operated by them. An escapement shaft is being sunk and will soon be completed. The mine is ventilated at present by the exhaust from a steam pump; this will be improved upon as soon as it becomes necessary. The mine generally is in good condition and fairly equipped.

W. H. Stephens, Mine Manager.

The principal local mines in and around Colchester are operated by Wm. Hulson, Michael Humes, Wilson & Co., and Napier & Taylor, and may be said to be generally in fair order. These mines each produce from 1,500 to 2,000 tons of coal annually. Napier & Taylor's shaft is a new one, having gone into operation in October, 1884. An escapement has been made during the year.

The other local mines in this vicinity, (and their name is legion), are mostly drift mines, and do comparatively little in summer. All coal mined around Colchester is from seam No. 2 of the general section, and is from 2 to 2½ feet thick. The depth below the surface at which the coal is found ranges from outcroppings in the ravines to 100 feet on the level prairie.

TENNESSEE.

The mine at this place, owned and operated by A. Newland, is in very fair condition, but coal mining is not carried on very extensively, the most of the coal mined being used in burning tile, a factory for the manufacture of which is operated in connection with the coal shaft. The coal is raised by steam power, and a furnace is used for ventilation.

A. Newland, Superintendent; Eli Hilliard, Mine Manager.

PRAIRIE CITY.

Two shafts are in operation at this place. The principal one is operated by the Prairie City Tile Co., and the coal mined is used almost entirely in the manufacture of tile.

The shaft operated by Millett & Hart produces from five to seven hundred tons of coal annually, most of the coal produced being mined by the operators themselves. The coal at this point is only 20 inches thick.

Several small local drift mines are in operation near Industry, twelve miles south of Macomb, and on Camp Creek, eight miles southeast of Colchester. These mines, as a rule, are only operated during the winter months, and then to a very limited extent; generally from one to three miners are employed in each mine. The seam worked in these mines differs somewhat from the seam worked at Colchester. The shale overlying the coal is also different. The seam is probably either No. 3 or No. 1 of the general section, the presumption being in favor of the latter.

Coal is also mined in small quantities five or six miles from Bushnell. The seam at this place is probably No. 1 of the general section.

Coal is usually mined at Blandinsville, twelve miles northwest of Colchester, but the mines were not operated last year on account of their being flooded with water.

MERCER COUNTY.

A slight falling off in the amount of coal produced has taken place in this county compared with last year, the greater part of which is due to a decrease in the output of the Coal Valley Mining Co.'s mines, at Cable. The falling off at those mines may be attributed to general depression in the coal trade. While the Coal Valley Coal Company's mines have only produced eighty-one thousand tons of coal during the year, their annual capacity for production—placed at its *lowest* estimate—would be three hundred thousand tons. The slope operated by this company has been practically shut down since the spring of 1884, nothing having been done, with the exception of improvements and preparations for a better condition of affairs in the coal market.

The shaft operated by this company from which all—or nearly all—of the coal produced is raised, has a capacity of seven hundred and fifty tons per day, and stands pre-eminent in the second district in point of equipment, natural advantages and general management. The coal is brought to the bottom of the shaft by tail-rope haulage, a little over three-fourths of a mile of engine plane being in operation, 2,278 feet on the north and 1,820 feet on the south side of the shaft. For this purpose two stationary engines are used underground, one run by "friction," and the other by "spur" gearing. The mine is ventilated by a fan eight feet in diameter and six feet wide, located at the bottom of the hoisting shaft. This fan is badly proportioned, as the width should *never* exceed two-fifths the diameter.

The coal is raised by a pair of engines, cylinders 14 inches in diameter and 22 inch stroke, geared motion; diameter of drum, 6 feet; diameter of ropes, $1\frac{1}{4}$ inches. The steam is supplied by a battery of five double flue boilers, 42 inches in diameter and 22 feet long, furnished with the usual adjuncts required by law.

An excellent apparatus for separating the slack from the nut-coal is in operation at this mine. It is the invention of the superintendent, and he has, or is about to obtain, a patent on it.

Robert Lee, Supt.; William Haddock, Mine Manager.

The new slope opened recently, and operated by R. B. Ellis, has been a partial disappointment. It was expected that the coal would prove at least four feet thick. Instead, however, it was found to be so thin as to be almost unworkable. The mine will probably be operated next winter and then abandoned.

The shaft operated by Charles Peterson has undergone some improvements during the year. The single linked chains used in hoisting heretofore, have been taken off, and a pair of new wire ropes, $\frac{7}{8}$ of an inch in diameter, substituted, with a pair of new cages added to the outfit. The product of the mine is used for local custom only, and amounts to about two thousand tons annually, very little being done in summer.

PRE-EMPTION.

Two local shafts are in operation at this point. The slope operated by Edward Boden has been abandoned, and the coal is raised from a new shaft twenty-two feet deep, the abandoned slope being used as a traveling way.

No change of importance is noted in the condition of Robert Taylor's mine, the general condition being fair.

VIOLA.

The principal mines at this place are in good "country bank" order.

William Blain and William Guthrie have each completed escapement shafts during the year.

Samuel Guthrie ought to have sunk an escapement, according to the time allowed by law, but his underground workings were not extensive enough to clear the buildings on top, and he was allowed to proceed without one.

Two drift mines were in operation about six miles northwest of Viola during part of the winter; the operators moved away early in the spring, and no statement of the coal mined could be obtained; so the mines have not been tabulated. The out-put, however, was small.

F. M. Martin's mine, on Pope Creek, six miles southwest of Viola, remains in good condition, with an abundance of excellent coal in sight, four feet thick.

John D. Tarr, in the same locality, has abandoned his old shaft and sunk a new one, and connected the workings underground for air and escapement.

Three mines are in operation near Millersburg, about seven miles north and a little west of Aledo. The seam at this point is only $2\frac{1}{2}$ feet thick. A fair business is done in winter, but very little in summer.

The drift operated by G. W. Fordham last year has been abandoned.

• John T. Davis has sunk an escapement to his mine.

The shaft at Aledo is 20 feet deep, is owned by Thomas Love, and leased and operated by Swan Lindgren. It is in good order generally. The coal is not quite 2 feet thick, and is probably seam No. 2 of the general section. The coal raised from all other mines in the county is from seam No. 1.

Three local mines have been in operation during the winter, from three to five miles northwest of New Windsor. The principal one is owned and operated by Jonas Simelson, and does a good winter trade.

Considerable increase in the production of coal may be expected in this county in the very near future.

The Empire Coal company has bought and leased about four hundred acres of coal land four miles northwest of Viola. Sinking was commenced in May, and coal 3 feet 8 inches thick was struck at a depth of 100 feet, on July 16, 1885.

A railroad track is being built, commencing at a point on the Galva and Kiethsburg branch of the C., B. & Q., two miles west of Viola, and running due north to the mine, a distance of two miles. The machinery will be put in position, entries driven, and railroad completed as soon as possible, and in all probability coal will be shipped early in the fall.

H. M. Gilchrist, Supt. and General Manager.

MARSHALL COUNTY.

The only mine of importance in this county is located within the corporate limits of the city of Wenona, and is owned and operated by the Wenona Coal Company. The shaft is 555 feet deep, from the surface to the bottom of the coal; the seam is No. 2 of the general section, 2 feet 8 inches thick, and of excellent quality. The workings are conducted on the longwall method, and show intelligent and economical management. The winding machinery consists of a pair of horizontal engines, cylinders 13 inches in diameter and 42 inch stroke, working on first, or direct motion, diameter of drum 5 feet, and ropes $1\frac{1}{8}$ inches in diameter. Owing to the high cage speed, which is about 1,150 feet per minute when hoisting coal, the small diameter of the drum, for ropes of the above size, and the proximity of the engines to the shaft, two pair of ropes are worn out every year.

The steam is supplied by a battery of four cylindrical boilers, 42 inches in diameter and 24 feet long, longitudinal seams double rivetted. The boilers are supplied with all the necessary adjuncts pertaining to steam boilers.

The sinking of an escapement shaft by this company was commenced May 1, 1884, and completed February 9, 1885. The escapement is the same depth as the main shaft. It is 7 feet long and 5 feet wide, and is located about 360 feet north of the hoisting shaft. Ladders have been placed in position; they are divided into lengths of 14 feet each, and pitch at an angle of about 60°, making an excellent avenue of escape in case of necessity.

A ventilating fan 10 feet in diameter has been ordered, and will probably be in position the latter part of August; then the Wenona mine can take its position among the well equipped mines of the State.

E. L. Monser, Sup't; John Merlin, Mine Manager.

James Thompson, the operator of a local shaft $3\frac{1}{2}$ miles west of Henry, has had a series of mishaps. During the summer of 1884 the coal around the bottom of the shaft caught fire from the furnace, and it was communicated to the shaft, and before it could be checked the timber in the shaft and the wooden buildings on top were completely destroyed. After enlarging, and retimbering the shaft and getting fairly underway again, the water from a small creek which runs over part of the workings broke into the mine. After several weeks ineffectual attempts to keep the water down, the mine was abandoned, and a new shaft sunk west of the old workings. It was at the sinking of the new shaft that Alexander Dunlap lost his life.

Among the drift mines along the bluff between Henry and Sparland very few changes have taken place.

The mine operated by F. P. Porter has been abandoned. The drift operated by Joseph Caley has been closed, and a new one opened, or rather an old one reopened.

The drift operated by David Mathias near Sparland has been abandoned, and the drift run by John Davis near the same place has undergone the same operation, and a new one has been opened.

George Kear has added to the number of mines by opening a drift about one mile north of Sparland.

The out-put of this county, compared with that reported for 1884, has doubled. This is due entirely to the increase in the production of the Wenona mine.

ROCK ISLAND COUNTY.

Very little change has taken place in the out-put of this county compared with last annual report. A slight decrease is noticeable, the cause of which may be attributed to the closing of Taylor Williams' mine, at Happy Hollow, which gave us about eight thousand tons for the report of 1884. The deficiency is nearly made up, however, by an increase in the out-put of the mine at Rapids City, which exceeds the previous annual production by about six thousand tons.

RAPIDS CITY.

The mine at this place, owned and operated by Taylor Williams, continues to be the most extensive in the county, and produced more coal last year than all the other mines in the county combined. The solid coal is all worked out, nothing now remaining but pillars, and they are being rapidly removed. The mine will last about two years, or possibly a little longer. It is in excellent condition in regard to ventilation and other requirements of law.

D. H. Williams, Superintendent; Samuel Baggs, Mine Manager.

A small shaft, located about one mile southeast of this place, has been operated by Fred Kollman during the year. It was sunk as a prospecting shaft, but the coal found is not satisfactory, and it will probably be abandoned shortly.

HAPPY HOLLOW.

Three small local mines have been in operation at this point during part of the year. The principal one, known as Guckert & Caswell's mine, has been run on a kind of coöperative plan. They have sunk an escapement shaft and put in a small furnace for ventilation during the year.

Robert Caswell, Manager.

HAMPTON AND MOLINE TOWNSHIPS.

Seven mines are in operation near the west line of Hampton and the east line of Moline townships, four of them being located in the former and three in the latter. The most important mine is operated by the Northern Mining Co. The opening is a shaft about 65 feet deep, and the coal is raised by steam power, a single engine and two steam boilers being used for that purpose. The seam will scarcely average $3\frac{1}{2}$ feet in thickness, and like the same seam at all the other mines in this vicinity, is subject to considerable variation in thickness. The seam is also undulating, either rising or dipping very rapidly, making drainage always difficult and often unsatisfactory. A ventilating fan is ordered and will be in position some time during the latter part of August. This will greatly improve the ventilation, which has been rather defective at this mine heretofore. A narrow-gauge horse track, three miles in length, has been constructed from the mine to Port Byron Junction, where the coal is loaded on railroad coal cars, and from this point can be transported over the C., R. I. & P., C., B. & Q. and C., M. & St. P. railroads. This arrangement will have a decided tendency to increase the production of coal at this mine, which has heretofore depended exclusively on teams as a means of transportation.

A. R. Stoddard, Superintendent; David Wallace, Mine Manager.

The shaft operated by the Eureka Coal Co. is 56 feet deep and went into operation in the spring of 1884. The coal is raised by horse power. The mine was commenced and is worked on the double-entry system, and in this particular is the best conducted mine in the vicinity. Ventilation is obtained by the exhaust from a steam pump, and has so far been sufficient. The long-wall system of mining has been tried during the year, both at this mine and the one operated by the Northern Mining Co., but in both cases the results were unsatisfactory, and the system has been abandoned. An escape shaft is being sunk and will be completed some time in August.

J. A. Shepherd, Superintendent; Michael Gibbons, Mine Manager.

The shaft operated by Silvis Bros. is 80 feet in depth, and the coal is raised by horse power, a steam pump being in use to raise the water. This mine is not in good condition generally. The ventilation is defective, and a new air-shaft will have to be added before the defect can be permanently remedied. The operator promises to have new guides put in the shaft, and the water removed from the traveling way between the escape and hoisting shafts as soon as possible, and to add an air chamber to his hoisting shaft early in the spring.

R. S. Silvis, Manager.

Four slopes were in operation last winter; two of them—Woodbury's and Donald's—have gone into operation during the year, and both have had escape shafts added.

COAL VALLEY.

Two shafts are operated at this place by the Black Diamond Coal Company. The mine known as the "Narrow Gauge" was closed early in the spring, and will remain so until fall, when it will be started up again. The product of this mine is consumed or sold in Moline, to which city it is taken by a small locomotive over a narrow gauge track.

The Black Diamond shaft gives employment to about fifteen miners in summer and twenty-five in winter. The work underground consists chiefly in drawing pillars. The shafts are connected underground, and both mines are ventilated by one furnace.

Richard Battersby, Superintendent.

Edwin Twomley, Mine Manager.

Eight or nine drift mines are in operation during the winter months in and around Coal Valley. They supply local custom only.

MILAN.

Four local mines are in operation between three and four miles southeast of Milan.

Vonach and Parker have each made escapements to their mines during the year.

ROCK ISLAND.

The shaft owned and operated by Mr. Bailey Davenport is located about three miles south of the city of Rock Island, and about a quarter of a mile from the summit, and just at the northern base of what is known locally as "Black Hawk's Watch Tower." The shaft is 80 feet in depth, and the coal at the bottom of the shaft about 2½ feet in thickness, overlaid with a very soft roof. The main entry running north has continued to dip, and the coal to get thicker and the roof stronger, and when last visited the coal at the face of the main entry—about two hundred yards from the bottom of the shaft—was about four feet thick and of very fair quality. Considerable expense is incurred, however, in bringing the coal and water up hill, and it is very probable that a new shaft will be sunk as near as possible to the bottom of the basin, and coal mined on a more extensive scale than heretofore. The coal is conveyed from the mine to Rock Island over the Milan and Rock Island street car tracks.

Charles Barry, Manager.

STARK COUNTY.

No material change has taken place in the amount of coal produced, nor the method of producing it, in this county during the year. The coal producers continue to supply the coal consumers of this county and no more. While this state of affairs continues, the annual output of the county will remain about the same from year to year, and will depend more on the rise and fall of the thermometer than on the general condition of trade.

The present report shows an increase of over two thousand tons, compared with the last, this increase being due to the discovery, by the inspector, of two mines in Elmira township, one of which, operated by James Green, produces about two thousand tons annually. This mine is in good condition generally, well ventilated so far as natural ventilation can be relied on, and is supplied with escape-ment shaft. The opening is a short slope, and the coal is raised by horse-power.

The drift mine operated by Joseph Armstrong, in the same locality, is only run during the winter months, and then to a very limited extent.

The shaft operated by James Higbee, at Wyoming, continues in good condition. The double entry system prevails; the ventilation is produced by a small furnace; the cages are supplied with safety catches, the top of the shaft is protected by guards, and all the necessary adjuncts to a coal shaft are in position. A pair of new wire ropes $\frac{7}{8}$ of an inch in diameter have been put in during the year.

The next mine of importance at Wyoming is the shaft operated by Stephenson & Watson. It is worked by single entry and ventilated by natural means, but it is admirably adapted for ventilation by this method, the hoisting shaft being nearly sixty feet in depth, and the intake air-course running out level to a ravine. Safety catches, guards, etc., are in use.

TOULON.

Two shafts are in operation four miles east and half a mile north of this place, the more important of which is owned and operated by Oscar Bass. The shaft is located in a valley, and is only twenty feet deep. The mine is comparatively new, not more than two thousand five hundred tons of coal having been taken out. The coal is five feet six inches thick by actual measurement, and almost entirely free from clay slips—something very unusual for seam No. 6. The coal is raised by horse-power, which is the usual method in this vicinity, and the water by steam power, a small steam pump being used for that purpose. The equipment of the mine generally is good, and an escape shaft has been sunk during the year.

The shaft operated by William Shaw, near Bass' mine, is nearly 80 feet deep. The coal is 4 feet 6 inches thick and free from clay slips, and both coal and water are raised by horse power; the hoisting of the water being a continual source of labor and expense.

It is more than probable that there are several hundred acres of workable coal, of excellent quality, in this neighborhood, waiting for some enterprising capitalist. The coal is quite easy of access, 90 feet below the surface being the maximum depth, with favorable ground to sink through. The only drawback would be the means of transportation, as a railroad track would have to be built for that purpose.

MODENA.

The two mines at this place, operated by John Scott and G. L. Talbott, respectively, are in fair condition, and have done a good business during the winter. Both completed their escapement shafts in the fall of 1884, as per agreement.

BRADFORD.

The shaft at this place, operated by Thomas Aitken, is the deepest in the county, being one hundred and five feet deep. It is the only mine in operation within a radius of seven or eight miles, and as a matter of course the owner enjoys a monopoly on a small scale, and pays a higher price for mining, and commands a higher price for his coal than any other operator in the county. The mine generally is in fair condition, considering the amount of clay slips, "horse-backs," and other natural disadvantages there are to contend with.

The drift mine in West Jersey township, operated by John Catton, remains without any variation in management or production; the latter being regulated by the demand, and amounts to a little over one thousand tons annually.

Both sides of the Spoon river, between Wyoming and Modena, are lined with drift banks, which are operated during the winter months, from one to two miners being employed in each, little or nothing being done in summer.

The shaft operated by John Price in the winter of 1883 and spring of 1884, has been abandoned.

A new drift has been opened during the year by Nathan Snave, near Modena.

SCHUYLER COUNTY.

The mines in this county have been devoted to supplying local trade only during the year.

The most important mine at present is operated by John Karr, located about $1\frac{1}{2}$ miles northeast of Rushville. The shaft is 46 feet deep, coal and water being raised by horse-power. The coal is over 5 feet thick, and is seam No. 5 of the general section. An escapement shaft has been completed at this mine during the year.

Two drift mines have been in operation during the winter, one located about 5 miles east, and the other $2\frac{1}{2}$ miles northeast of Rushville. Both are now abandoned.

Three drift mines were found near Pleasant View. The seam at this place is also No. 5 of the general section, and is $4\frac{1}{2}$ feet thick. Only five miners were employed during the winter months, and in summer the mines are closed.

One drift mine was found near Frederick. The coal is $2\frac{1}{2}$ feet thick, and is probably seam No. 3 of the general section. One miner is employed in summer and five in winter.

The two drift mines at Ray are in their usual good condition, the entire product being used in burning the tile manufactured at this place. In the last report this seam was tabulated as No. 2; in this report it is called No. 3, the roof shales being more in accordance with those generally found in the latter seam.

Considerable increase in the production of coal in this county may be expected soon.

Samuel Work & Company have sunk a new shaft about 2 miles northeast of the city of Rushville. They reached the coal, which is $5\frac{1}{2}$ feet thick, at a depth of 53 feet below the surface June 10, 1885. A railroad track $\frac{3}{4}$ of a mile in length will be built from the Buda and Rushville branch of the C. B. & Q. to the mine.

The coal will be raised by steam power; winding machinery will be placed in position as soon as possible, and it is likely that coal will be shipped early in the fall of 1885. The operators have a lease on 130 acres, with the privilege of more if they require it. The shaft is $13\frac{1}{2}$ feet long, $6\frac{1}{2}$ feet wide, with 3 feet partitioned off for an air chamber. The coal is similar in quality to that now being mined at Astoria, Fulton county.

WARREN COUNTY.

The mines in this county have just about sustained their previous annual record in the amount of coal produced. By comparing the present report with the report of 1884, a falling off of about two thousand tons will be found; this, however, is due to the fact, that in the report of 1884 the out-put of Simcock's mine at Alexis was tabulated as 4,800 tons, while the real amount produced was 48,000 bushels, being 1,930 tons. After deducting the difference between 4,800 tons and 1,930 tons from the total production of 1884, we have an increase of about 1000 tons in favor of 1885.

ALEXIS.

The mine at this place, owned and operated by John Simcock, continues to be the leading mine in the county, and is in excellent condition in regard to ventilation, drainage and general management.

The drift operated by William Cook is nearly finished; what little coal remains is below water level, and will require other means than those at present applied, to remove the water.

The drift lately operated by W. L. Miller has changed hands. The old drift is finished, and a new one will be put in for the fall and winter trade.

ROSEVILLE.

The shaft at this place, owned and operated by John A Gordon, is located near the corporate limits of the village. The mine was laid out on the double entry plan, and an attempt was made at what might be termed in this county mining on an extensive scale, but after a fair trial, it was found that the investment was not a good one.

It is the intention to commence boring at the bottom of Gordon's shaft, and run a hole down 100 feet, or more, below the seam that is now worked. If a workable seam is found, sinking will be commenced at once if no coal can be found, the present mine will be operated during the fall and winter, and then, in all probability, be abandoned.

MONMOUTH.

Two mines are worked $4\frac{1}{2}$ miles northeast of Monmouth. The drift owned by John Young and operated by John Selkirk during the winter of 1883 has been abandoned, and a new drift opened, and an air and escape shaft added.

The shaft owned by William Chicken and operated by William Johnson, has done a fair business during the winter, but was closed temporarily when visited.

Three mines are in operation from 5 to 6 miles east of Monmouth.

The shaft operated by Packard has been abandoned, and a slope opened.

Hubbard's shaft is finished and he is now operating a drift. Both operators have constructed escapements to their new mines.

Thomas Swan has improved his mine by adding cages to his outfit during the year.

SWAN CREEK AND YOUNGSTOWN.

Numerous drifts and slopes are in operation from one to two miles north of Youngstown, from one to three miners being employed in each mine during the winter. A new shaft has been sunk by William Wallingford, 27 feet deep, and a new slope opened by O. H. Stewart.

Robinson Wilson has finished his old slope and opened a new one. Stewart has added an escapement to his slope, and Horace Wallace has added a second opening to his drift.

KIRKWOOD.

The shaft, located 4 miles south of this place, was closed early in the spring of 1884, and was not opened again till January, 1885. It has since been abandoned and a new shaft sunk. Cages will be put in the new shaft, something unknown heretofore at this point.

CONCLUSION.

The condition of the larger mines, generally speaking, may be classed as good, and up to the standard contemplated by the mining law. Especially is this true where fans are used for ventilating purposes, and where the system of mining by double entry prevails.

As the larger or shipping mines, however, constitute only a little over nine per cent. of the total number of mines in operation during the busy season, it will be seen that there are a little over ninety per cent. of the mines devoted entirely to supplying local custom.

The latter class of mines are not in as good condition as the former, and while some of them could not be improved on when the two factors—health and safety of the miner and economy—are taken into consideration, many of them are worked on methods that are neither very safe nor very healthy, and quite the reverse to economical.

It is a matter for congratulation, however, that this latter class of mines is slowly but surely disappearing, and as new ones are opened, a little timely advice, with correct and easily understood plans, backed by the mining laws of the State, cannot fail to make the new mines a decided improvement on the old ones.

In dealing with delinquent operators, the heroic method of applying the law has been carefully avoided. Moral suasion has been the medium through which the improvements and conformity to law have been obtained. Once only has the State's Attorney been appealed to, and the defects then complained of were speedily remedied and the case was withdrawn.

Many small improvements have been made during the year, a detailed account of which would be superfluous.

Thirty-two escapements have been completed during the year, the most important and expensive of which is the escapement shaft at Wenona, which is 555 feet in depth.

Ventilating fans have been introduced into three different localities in which they have heretofore been unknown. The benefits that have been and are likely to be derived from the introduction of these motors of ventilation, can scarcely be over estimated when considered from a sanitary standpoint.

While slight reductions in almost every branch of labor connected with coal mining have taken place at the principal mines in the district, no strikes or other labor troubles, extensive enough to call for special mention, have taken place.

BUREAU COUNTY—1885.

[illegible]

HANCOCK COUNTY--1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.					EMPLOYES.					PRODUCT.								
			Drift, slope or shaft.....	Shaft.	Horse.	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam.....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd Winter..... Summer.....	No. of other employees, in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining. Winter..... Summer.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
Augusta Coal Co.....	Augusta.....	\$5,000	.....	.....	.....	.....	50	6	212	R P	1	1 Nat'l	15	1	200	.....	.....	.....	\$1 12 ³ / ₄	3,200	\$2 00
Sam Jones.....	".....	300	.....	.....	.....	.....	52	6	212	"	1	"	8	1	250	.....	.....	.....	\$1 12 ³ / ₄	1,500	\$1 00
Newcomb & Compton.....	".....	600	.....	.....	.....	.....	50	6	212	"	1	"	3	1	200	.....	.....	.....	\$1 12 ³ / ₄	920	\$1 57 ¹ / ₂
J. B. Dinant.....	".....	650	.....	.....	.....	.....	55	6	212	"	1	"	10	1	150	.....	.....	.....	\$1 12 ³ / ₄	800	\$1 00
O. P. Leach.....	".....	1,300	.....	.....	.....	.....	40	6	212	"	1	"	3	1	110	.....	.....	.....	\$1 12 ³ / ₄	496	\$1 00
John Christman.....	".....	250	Drift.	.....	Hand.	.....	50	6	212	"	1	"	3	.....	100	.....	.....	.....	\$1 12 ³ / ₄	200	\$1 00
Totals.....	.....	\$8,100	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	45	5	980	5	.....	.....	\$1 16	7,176	\$1 95

KNOX COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYEES.				PRODUCT.						
			Drift, slope or shaft.....	Steam, horse or hand-power	Thickness of coal—feet and inches	Geological No. of seam...	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of other employes in and about mine.....	No. of days worked during the year	No. of kegs of powder used during the year	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	No. of tons of coal produced .....	Average value of coal per ton at the mine .....
									Summer	Winter							
George Clifford.....	Oneida	\$4,000	Shaft.	Horse.	40	4	6	P-R.	Fur.		30	2	280			\$0 87½	\$6,010
James McGovern.....	..	300	Slope.	..	50	4	6	..	..		5	1	275			87½	1,200
Charles Morgan.....	..	100	Drift.	..	25	4	6	..	Nat'l		5		130			75	800
G. E. Boottrom.....	Galesburg ..	50	Shaft.	Horse.	24	4-6	1	..	..		12	1	200			75	900
Thomas Wilstead.....	..	300	..	..	30	4	1	..	..		3		200			1 00	2,900
William Essex.....	..	1,000	..	..	50	4	1	..	..		13	1	175			1 00	2,400
Ross & Woodward.....	..	100	Drift.	Hand.	30	3-6	1	..	..		4		176			1 00	2,112
Thomas Muir.....	..	150	..	..	20	3	1	..	..		2	4	200			1 00	1,040
Benjamin Lewis.....	..	60	..	..	17	3	1	..	..		2		150			1 00	1,000
Galesburg Brick and Tile Co.....	..	2,000	Shaft.	Steam.	70	2	6	..	Jet.		20	4	65			1 50	400
Olaf Ostlin.....	Wataga.....	100	Drift.	Hand.	30	4	6	..	Nat'l		3		220			75	2,273
William Walsh.....	..	200	Shaft.	Horse.	50	4	6	..	Fur.		8	1	200			75	2,000
Louis Nodine.....	..	200	Slope.	..	50	4	6	..	..		3		180			75	1,200
R. M. Campbell.....	..	500	Shaft.	..	23	4	6	..	Nat'l		6	1	200			75	1,200
James Taylor.....	..	200	Slope.	..	50	4	6	..	..		2		180			75	974
Rosenberg & Pierson.....	..	120	Drift.	Hand.	50	4	6	..	..		2		180			75	930
Gus. Rodell.....	..	50	..	..	40	4	6	..	..		2		100			75	930
Lendblom & Fred.....	..	50	..	..	15	4	6	..	..		2		100			75	920
C. F. Johnson.....	..	60	..	..	40	4	6	..	..		2		150			75	400
Reece & Shades.....	..	200	Shaft.	Horse.	20	4-6	2	..	..		3		150			75	320
Duffield Bros.....	Abingdon.....	3,000	Shaft.	Steam.	85	2	4	..	Jet.		12	3	100			1 25	80
L. H. Hopper.....	..	150	Drift.	Hand.	28	2-6	4	..	Fur.		2		200			1 00	2,400
Knoxville.....	..	50	..	..	20	2-6	4	..	..		1		200			87½	1,840
Larsen & Johnson.....	..	30	..	..	30	2-6	4	..	Nat'l		1		180			1 00	1,840
Nelson & Anderson.....	..	50	..	..	30	2-6	4	..	..		1		200			1 00	480
Andrew Nelson.....	..	100	Shaft.	..	16	2-6	4	..	..		3		150			1 00	360
James Nelson.....	..	100	Shaft.	..	16	2-6	4	..	..		3		150			1 00	240

William Jones.....	75 Drift.	Hand.	18 2-6	4 P-R.	1 Nat'l	3	65	1 00	180 1 75
Nelson Walburg.....	50	Shaft.	20 2-6	4	2	1	100	87½	80 1 50
Cassius Cox.....	350	Horse.	30 4-6	6	2	6	160	75	1,280 1 50
Geo. Dalton.....	165	Slope	50 4-6	6	2	1	140	75	1,000 1 50
John E. Furman.....	200	Shaft.	25 4-6	6	2	8	150	75	980 1 50
M. R. Carter.....	150	Slope	25 4-6	6	1	6	100	75	800 1 50
George Bowman.....	200	Shaft.	22 4-6	6	1	1	40	75	40 1 50
David Grim, Jr.....	50	Drift.	18 4	6	1	6	200	75	800 1 25
Ambrose King.....	50	Hand.	12 4	6	2	6	160	75	560 1 50
Peter Nelson.....	25	Hand.	20 3-6	6	1	5	120	75	400 1 00
J. W. Temple.....	40	Hand.	32 4	6	1	2	180	75	320 1 25
Eric Stomberg.....	25	Hand.	20 3-6	6	1	1	180	75	240 1 00
George Reed.....	30	Hand.	25 4-6	6	1	2	80	75	240 1 50
William Sleep.....	75	Slope	20 4-6	6	2	2	100	75	80 1 25
Louis Peterson.....	40	Drift.	35 4-6	6	2	1	70	75	40 1 00
George Shustrom.....	40	Hand.	20 4-6	6	2	1	50	75	24 1 00
Louis Wexall.....	30	Hand.	20 4	6	2	1	50	75	24 1 00
O. P. Severene.....	30	Hand.	30 4-6	6	2	6	100	75	640 1 25
Henry McNaught.....	30	Hand.	34 4	6	2	2	180	75	600 1 25
Nord & Smith.....	200	Hand.	20 4-6	6	1	7	180	75	480 1 25
James McNaught.....	35	Hand.	34 4	6	1	1	60	75	20 1 25
W. H. Goff.....	100	Hand.	20 4-6	6	1	4	120	75	350 1 25
Jesse Etcheson.....	75	Hand.	30 2	4	2	3	140	1 00	368 1 50
A. C. Burnett.....	45	Hand.	20 2	4	2	1	120	1 25	320 1 62½
J. S. Irons.....	450	Shaft.	42 3	4	2	4	60	87½	240 1 50
Totals.....	\$15,580				77	278	21	\$0 87.3 \$0 87.3	\$44,661 \$1 58

MARSHALL COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.							EMPLOYES.				PRODUCT.					
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed.....	Winter.....	Summer.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
Wenona Coal Company.	Wenona	\$30,000	Shaft.....	Horse.....	555	2-8	2	2	St. jet.	75	100	236	45	1	2	\$0 90	37,452	\$1 53	
James Thomson.....	Henry	800	Drift.....	Hand.....	50	4-6	1	1	Nat.....	2	5	220	1	1	1	1 00	1,300	1 75	
Joseph Caley.....	"	50	"	"	50	3-6	1	1	"	1	3	130	15	..	..	1 00	160	1 50	
F. P. Porter.....	"	40	"	"	100	3-6	7	7	"	1	4	180	8	..	..	1 00	600	1 50	
John McFadden.....	"	200	"	"	100	3-6	7	7	"	1	1	180	8	..	..	1 00	320	1 50	
Timothy Mansell.....	"	40	"	"	100	3-6	7	7	"	1	3	100	5	..	..	1 00	140	1 50	
William Horrocks.....	"	200	"	"	40	3-6	7	7	"	1	2	100	5	..	..	1 00	200	1 50	
William Lopeman.....	"	40	"	"	50	3-6	7	7	"	1	3	175	10	..	..	1 00	400	1 50	
John Kenney.....	"	60	"	"	40	3-6	7	7	"	1	2	120	7	..	..	1 00	440	1 50	
John Daniels.....	"	50	"	"	70	3-6	7	7	"	2	5	180	12	..	..	1 00	660	1 50	
William Bough.....	"	300	"	"	100	3-6	7	7	"	2	3	200	9	..	..	1 00	1,080	1 50	
W. M. Osborne.....	Spartan	100	"	"	60	3-6	7	7	"	1	3	170	7	..	..	1 00	1,640	1 50	
R. M. Frisbie.....	"	150	"	"	50	3-6	7	7	"	1	3	175	3	..	..	1 00	140	1 50	
John Davis.....	"	50	"	"	60	3-6	7	7	"	1	2	175	3	..	..	1 00	480	1 50	
Charles Saville.....	"	75	"	"	40	3-6	7	7	"	1	2	100	3	..	..	1 00	120	1 50	
George Kear.....	"	50	"	"	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..
Totals		\$32,205								87	143	2,561	125	1	2	\$ 91.4	44,272	\$1 53	

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYEES.				PRODUCT.						
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam ...	Long-wall, or pillar and room workings.....	No. of places of egress. ...	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....

Kipling Bros.....	50	2	2	P. R.	U Nat'l	4	7	1	200	1 12½	1 37½	2,000	1 87½
William Hodgson ..	50	2	2	2	2	1	2	1	200	1 12½	1 37½	680	1 87½
Charles Welch ..	60	2	2	2	2	1	5	1	100	1 12½	1 37½	400	1 75
John Zimmerman ..	125	2	2	2	2	2	6	1	130	1 25	1 37½	600	1 75
George Usher.....	225	2	2	2	2	3	3	1	200	1 00	1 25	400	1 62½
John Myers.....	100	2	2	2	2	4	4	1	180	1 00	1 25	1,400	1 62½
Reece & Justin.....	50	2	2	2	2	1	3	1	30	1 12½	1 25	80	1 50
Thomas Kipling ..	100	2	2	2	2	1	4	1	150	1 12½	1 37½	1,000	1 87½
Totals	\$64,360	..	..	..	..	408	557	57	8,001	8 \$1 10.5	\$1 34	109,723	\$1 83

* Stripping.

MERCER COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.							EMPLOYES.					PRODUCT.						
			Drift, slope or shaft.....	Steam, horse or hand power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	Winter.....	Summer.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time).....	Price per ton paid for mining.	Winter.....	Summer.....	No. of tons of coal produced.....	Average value of coal per ton at the mine. ....
Coal Valley Mining Co..	Cable.....	{ \$60,000 15,000	Shaft.	Steam.	60	4-6	1	P-R	2	Fan.	136	156	137	112	1,200	..	6	\$0 95	87½	81,207	\$2 00
R. B. Ellis	"	10,000	Slope.	Horse.	20	3	1	"	"	Nat'l	9	30	4	225	100	..	..	87½	5,000	1 75	
Charles Peterson.....	"	1,500	Shaft.	Steam.	65	4	1	"	"	"	2	10	1	200	50	..	..	1 00	2,200	1 75	
F. M. Martin.....	Viola.....	800	"	Horse.	32	3	1	"	"	"	2	10	1	180	75	..	..	87½	2,824	1 50	
William Blaine	"	1,000	"	"	32	3	1	"	"	"	2	7	1	180	85	..	..	75	2,512	1 25	
Russell Parks.....	"	300	"	"	41	4	1	"	"	"	2	4	1	170	25	..	..	75	1,000	1 25	
Samuel Guthrie.....	"	200	"	"	52	4	1	"	"	"	1	4	1	100	10	..	..	75	1,000	1 25	
John D. Tart.....	"	900	"	"	32	4	1	"	"	"	1	3	1	180	32	..	..	75	1,240	1 25	
William Guthrie	"	75	"	"	22	4	1	"	"	"	2	10	1	60	6	..	..	75	630	1 25	
Alvin T. Jones.....	"	800	"	Steam.	20	4-6	1	"	"	"	2	10	1	200	20	..	..	75	420	1 25	
Edward Boden.....	Pre-emption.	800	"	Horse.	36	4	1	"	"	"	2	8	1	200	75	..	..	87½	2,800	1 25	
Robert Taylor.....	"	300	"	"	30	2-3	1	"	"	"	4	20	1	180	50	..	..	1 25	2,400	2 00	
Jonas Simelson.....	New Windsor	100	"	"	35	2-3	1	"	"	"	7	1	1	100	20	..	..	1 25	1,600	2 00	
Charles Birglin.....	"	100	"	"	36	2-6	1	"	"	"	1	5	1	170	..	..	..	1 25	784	1 75	
Isaac T. Parker.....	Millersburg ..	500	"	"	30	2-6	1	"	"	"	1	3	1	130	..	..	..	1 25	920	2 00	
John T. Davis.....	"	400	"	"	30	2-6	1	"	"	"	1	3	1	100	..	..	..	1 25	480	2 00	
Henry Fowler.....	"	100	Drift.	Hand.	30	2-6	1	"	"	"	1	3	1	275	8	..	..	1 12½	400	2 00	
Griffin Bros.....	Griffin	400	Shaft.	Horse.	30	2-6	1	"	"	"	2	5	1	240	..	..	..	1 25	1,400	2 00	
Swan Lindgren.....	Aledo.....	250	"	"	20	2	2	"	"	"	170	296	157	3,122	1,768	..	6	\$0 94 3 \$0 94 3	600	\$1 89	
Total.....		\$93,725																		109,417	\$1 89

ROCK ISLAND COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYEES.				PRODUCT.								
			Drift, slope or shaft.	Steam, horse or hand-power.	Thickness of coal—feet and inches.	Geological No. of seam.	Long-wall, or pillar and room workings.	No. of places of egress.	Ventilation, by fan, furnace or otherwise?	Number of miners employ'd		No. of men injured (so as to lose time).	No. men killed during year.	No. of kegs of powder used during the year.	No. of days worked during the year.	Price per ton paid for mining.		No. of tons of coal produced.	Average value of coal per ton at the mine.
										Summer.	Winter.					Summer.	Winter.		
Taylor Williams	Rapids City.	\$100,000	Shaft.	Steam.	80	4	1	P. R.	Fan.	100	75	35	240	1,096		52,740	\$1.80		
Fred Kollman.	Hampton.	800	"	Horse.	63	2-6	1	"	Nat'l	4	6	1	180	20		1,240	2.00		
Northern Mining Co.	"	20,000	"	Steam.	80	3-6	1	"	Jet	30	40	9	240	325		6,702	1.75		
Guckert & Caswell.	"	600	"	Horse.	28	3-6	1	"	Fur.	2	1	1	150	10		800	1.75		
James Walton.	"	75	Slope	"	10	3-6	1	"	Nat'l	13	25	2	50	4		378	1.75		
Silvis Bros.	Carbon Cliff.	5,000	Shaft.	"	80	4	1	"	Fur.	15	18	2	200	155		5,581	1.62½		
John Woodbury.	"	2,000	Slope	"	15	3-6	1	"	Nat'l	12	20	5	180	150		1,200	1.70		
Eureka Mining Co.	Moline.	25,000	Shaft.	"	56	3-6	1	"	Jet	5	15	4	225	25		5,480	2.00		
Bailey Davenport.	Rock Island.	6,000	Slope	Steam.	80	3-6	1	"	Fan	8	14	1	160	20		4,000	1.75		
Bowles & Wotherspoon	Bowlesburg.	1,000	Slope	Horse.	50	3-6	1	"	Nat'l	12	17	1	150	16		3,214	1.75		
William Allison.	"	1,500	"	"	40	3-6	1	"	"	15	25	6	150	12		1,800	1.75		
George Donald.	Coal Valley	60,000	Shaft.	Steam.	40	3-6	1	"	Fur.	15	25	6	241	47		1,000	1.75		
Black Diamond Coal Co.	"	400	Drift.	"	80	3-6	1	"	"	1	3	1	180	40		7,556	1.75		
Mansell & Battersby	"	200	"	Hand.	20	4	1	"	Nat'l	1	3	1	150	8		6,118	1.75		
John Frye.	"	60	"	Hand.	30	4	1	"	"	1	3	1	150	5		1,080	1.50		
William Johnson.	"	50	"	"	20	3-6	1	"	"	1	2	1	200			480	1.50		
Joseph Bardsley.	"	45	"	"	25	4-6	1	"	"	1	1	1	150			370	1.50		
Joseph Garland.	"	200	"	"	60	2	1	"	"	1	1	1	75			212	1.50		
Joseph Sackville.	"	100	"	"	20	3-6	1	"	"				70			100	1.75		
George Wilson.	"	50	"	"	30	3-6	1	"	"	2	2	1	80			140	1.75		
D. L. Edwards.	"	50	"	"	30	4	1	"	"	2	2	1	80			80	1.75		
William Moss.	"	50	"	"	30	4	1	"	"	2	2	1	70			80	1.50		
Thomas Murphy.	"	50	Slope	Horse.	15	4	1	"	"	1	1	1	50			48	1.62½		

Rock Island County—Continued.

Name of firm, company or individual oper- ating mine.	Town or post- office nearest the mine.	Capital em- ployed.	CHARACTER OF PLANT.			EMPLOYES.				PRODUCT.								
			Drift, slope or shaft.....	Steam, horse or hand- power.	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress	Ventilation, by fan, fur- nace or otherwise?.....	Number of miners employ'd	No. of other employes in and about mine	No. of days worked during the year.....	No. of kegs of powder used during the year	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	Average value of coal per ton at the mine.....
										Winter.....	Summer.....							
Fred Vonach	Milan	\$300.....	Shaft.....	Horse.....	40.....	3.....	1.....	P. R.	2.....	Nat'l.....	2.....	6.....	1.....	200.....	.....	.....	\$0 87½	1, 018 \$1 75
William Parker.....	".....	300.....	".....	".....	56.....	3.....	1.....	".....	1.....	".....	4.....	3.....	1.....	200.....	4.....	.....	87½	387 1 75
John Fotheringham	".....	2, 000.....	".....	".....	70.....	3.....	1.....	".....	2.....	".....	4.....	4.....	1.....	200.....	4.....	.....	87½	320 1 75
Patrick McCarty	".....	60.....	Drift.....	Hand..	30.....	2-6.....	1.....	".....	.....	".....	.....	2.....	.....	80.....	.....	.....	1 25	256 1 75
Totals		\$226, 840.....							200.....		80.....	4, 421.....	2, 019.....	4.....	\$0 80.1			102, 980 \$1 75

SCHUYLER COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.					
			Drift, slope or shaft.....	Steam, horse or hand-power	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches	Geological No. of seam	Long-wall, or pillar and room workings	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd	No. of days worked during the year	No. men killed during year	No. of men injured (so as to lose time)	No. of tons of coal produced	Average value of coal per ton at the mine.....
										Winter.....	Summer.....					
John Kart.....	Rushville.....	\$2,000	Shaft.....	Horse.....	46	5	5	P-R..	2	Fur.	6	208	100	.....	2,482	\$1 50
William Cagle.....	"	50	Slope.....	Hand.....	18	5-6	5	"	2	Nat'l	4	130	25	.....	600	1 25
Munroe & Pertwood.....	"	60	Drift.....	"	20	5	5	"	2	"	4	120	12	.....	320	1 25
Frank Lawrence.....	Ray.....	250	"	"	40	2-6	3	"	2	"	5	180	.....	.....	2,000	1 75
Pemberton Bro.'s.....	"	250	"	"	40	2-6	3	"	2	"	5	120	.....	.....	520	1 75
John Easton.....	Pleasant View.....	75	"	"	30	4-6	5	"	2	"	5	100	.....	.....	480	1 25
Walter Croxton.....	"	70	"	"	25	4-6	5	"	2	"	5	60	.....	.....	200	1 25
O. P. Gorsage.....	"	65	"	"	30	4-6	5	"	2	"	5	180	.....	.....	80	1 25
Sam Humphrey.....	Fredrick.....	50	"	"	20	2-6	3	"	2	"	5	120	.....	.....	400	1 50
Totals.....		\$2,870							12		29	1,218	137		7,082	\$1 52

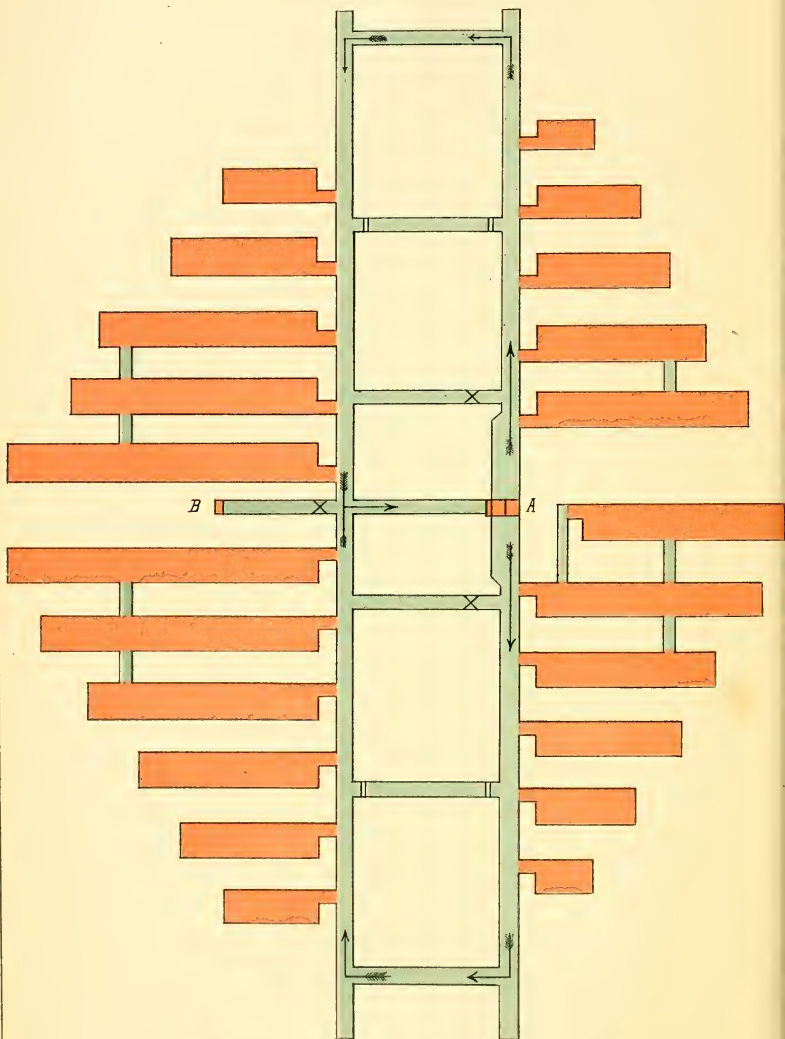
STARK COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.						EMPLOYES.				PRODUCT.						
		Drift, slope or shaft	Steam, horse or hand-power	Depth of coal below the surface—feet	Thickness of coal—feet and inches	Geological No. of seam	Long-wall, or pillar and room workings	No. of places of egress	Ventilation, by fan, furnace or otherwise?	Number of miners employed	No. of other employees in and about mine.	No. of days worked during the year.	No. of kegs of powder used during year.	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	No. of tons of coal produced.	Average value of coal per ton at the mine.
										Winter.	Summer.							
James Higbee	Wyoming	\$2,000 Shaft.	Horse.	80	4	6			Fur.	3	10	180	10		1	\$0 87½	\$2,950	\$1 75
Stephenson & Watson	"	1,000 Drift.	Hand.	57	4	6			Nat'l	4	8	220				87½	1,624	1 50
Joseph Swanson	"	50	"	40	4	6			"	1	3	170				87½	1,000	1 50
John McArthur	"	50	"	30	3-9	6			"	1	1	185				87½	240	1 50
Aaron Newton	"	50	"	50	3-6	6			"	1	1	120				87½	80	1 50
Henry Newton	"	50	"	40	4	6			"	1	1	100				87½	170	1 50
William McCall	"	25	"	40	3-6	6			"	1	1	200				87½	100	1 50
Hiram Thurston	"	100	"	40	4	6			"	2	30	70				87½	2,000	1 25
Richard Howorth	"	1,500 Shaft.	Horse.	20	5-6	6			"	3	5	150	12		1	75	920	1 35
Oscar Bass	Foulon	500	"	77	4-6	6			"	1	3	170	6			75	480	1 25
William Shaw	"	60	Drift.	40	4	6			"	2	2	140				75	360	1 25
Harvey Cross	"	100	"	38	4	6			"	4	1	250	6			1 00	1,400	1 75
William Newton	Modena	800 Shaft.	Horse.	48	4-6	6			"	2	7	200	8			1 00	1,360	1 75
John Scott	"	500	"	50	4-6	6			"	2	2	100				75	240	1 25
Geo. L. Talbott	"	60	Drift.	40	4	6			"	1	1	60				87½	105	1 50
Hugh McGurl	"	50	"	20	4	6			"	2	8	200				87½	2,000	1 75
Nathan Snare	Osceola	300 Slope	Horse.	30	4	6			"	2	1	100				87½	2,200	2 00
James Green	"	75	Drift.	36	4	6			"	3	12	220	100			1 00	1,055	1 75
Joseph Armstrong	Bradford.	2,000 Shaft.	Horse.	105	4-6	6			"	1	8	200				87½		
Thomas Aiken	"	3,500	Drift.	35	5-6	4			"	29	91	3,375	172		2	\$0 81.1	\$19,455	\$1 66
John Catton	West Jersey																	
Totals		\$13,570																

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.				EMPLOYEES.				PRODUCT.						
		Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress ..	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed ^d	No. of days worked during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....

RECAPITULATION BY COUNTIES—SECOND DISTRICT.

Counties.	Capital employed.	Kinds of power employed	Kinds of openings.	Modes of working coal.	No. of miners and other employees.	Average price per ton paid for mining.		No. of tons of coal produced.	Average price of coal per ton at the mines.	No. of mines with escapement shaft.	No. of mines without escapement shaft.	Kinds of power used for ventilation																	
						Summer.....	Winter.....																						
Natural.....																													
Steam jet.....																													
Furnace.....																													
Fan.....																													
No. of mines with escapement shaft.																													
No. of mines without escapement shaft.																													
Average price of coal per ton at the mines.																													
No. of tons of coal produced.																													
Average price per ton paid for mining.																													
No. of men injured so as to lose time.....																													
No. of men killed.....																													
No. of kegs of powder used....																													
Average No. of days worked..																													
Kinds of power employed	Kinds of openings.	Modes of working coal.	No. of miners and other employees.	Other employees.....		Miners, winter....		Miners, summer..		Double entry		Single entry.		Long wall...		Pillar and room..		Drift.....		Slope.....		Shaft.....		Hand.....		Horse.....		Steam.....	
				Double entry		Single entry.		Long wall...		Pillar and room..		Drift.....		Slope.....		Shaft.....		Hand.....		Horse.....		Steam.....							
Bureau.....	\$1,639,750	10,633	18	3	15	4	13	4	1	15	3	17	1	236	401	138	244	2,512	4	\$0 82.3	\$0 84.4	95,057	\$1 62	15	4	\$0 82.3	\$0 84.4	95,057	\$1 62
Hancock.....	8,100	148	6	1	5	1	5	1	1	27	6	5	1	16	45	5	163	5	4	1 16	1 16	7,176	1 98	4	4	1 16	1 16	7,176	1 98
Henry.....	223,760	1,025	27	6	21	10	12	17	32	14	6	321	541	97	178	665	1	4	87 3	89 3	167,895	1 62	25	3	87 3	89 3	167,895	1 62	
Knox.....	15,580	1,523	51	51	2	1	5	1	1	51	1	49	2	77	278	21	142	1	2	87 3	87 3	44,661	1 58	33	18	87 3	87 3	44,661	1 58
Marshall.....	32,295	2,736	16	1	15	1	15	1	1	15	1	15	1	87	143	21	160	2	2	91 4	91 5	103,272	1 53	10	6	91 4	91 5	103,272	1 53
McDonough.....	64,560	2,354	58	8	50	9	10	39	18	2	47	408	557	57	138	8	138	8	8	1 10	94 3	103,743	1 83	52	1	1 10	94 3	103,743	1 83
Mercer.....	43,725	1,585	19	2	17	3	15	1	1	19	1	18	1	170	296	157	164	1,768	6	80 1	82 1	102,417	1 78	17	3	80 1	82 1	102,417	1 78
Rock Island.....	226,840	1,258	28	5	23	6	13	9	12	6	25	3	200	326	80	158	157	135	2	89 1	90 3	102,980	1 80	23	1	89 1	90 3	102,980	1 80
Schuyler.....	2,870	409	9	9	9	9	7	1	1	9	9	20	1	12	29	1	135	137	2	88 1	88 1	19,455	1 52	19	3	88 1	88 1	19,455	1 52
Stark.....	13,570	770	21	21	21	21	13	21	21	21	21	20	1	35	87	8	155	102	1	1 09	1 13	15,349	1 94	20	3	1 09	1 13	15,349	1 94
Warren.....	6,530	400	23	23	23	23	9	23	23	23	23	22	1	35	87	8	155	102	1	1 09	1 13	15,349	1 94	20	3	1 09	1 13	15,349	1 94
Totals...	\$2,327,280	20,871	276	26	250	36	103	137	112	34	242	34	1,581	2,794	597	163	7,505	3	31	\$0 90.7	\$0 95.8	723,077	\$1 71	225	51	\$0 90.7	\$0 95.8	723,077	\$1 71



PLAN FOR SMALL SHAFT WORKINGS.

DESIGNED FOR LIMITED OUTPUT TO LOCAL TRADE

REFERENCE.

A... MAIN SHAFT.

B... ESCAPE SHAFT

←... AIR CURRENT

X... DOORS.

||... STOPPINGS.

PLANS FOR SMALL MINES.

The accompanying plans are given as suggestions to those operating or about to open small mines for local trade, with an annual output of from one to three thousand tons.

The advantages offered by these plans over those usually adopted in mines of this character are—

The ventilation will be as good as it is possible to make it in room-and-pillar workings, without the use of brattice.

The amount of entry or narrow work to be driven for a given number of acres of coal will be reduced to a minimum.

Mines opened upon these plans can be worked from five to eight years longer with the same annual output than mines conducted on the usual single-entry system.

The parallel entries, as shown in the illustrations, may be extended indefinitely, but as the coal is usually pushed out by hand, 300 yards would probably be an ordinary limit. The greater the distance between the entries, the greater will be the amount of coal taken out of one opening. Assuming the entries to be 30 yards apart and 300 yards long, and the rooms to be driven a distance of 80 yards at right angles with the entries, a simple computation will show the area thus mined to be nearly 12 acres. Then supposing the coal to be three feet thick, and the net product per acre to be 1,000 tons for each foot in thickness, which is a low estimate, we have 3,000 tons per acre, or 36,000 tons in all, derived from this opening.

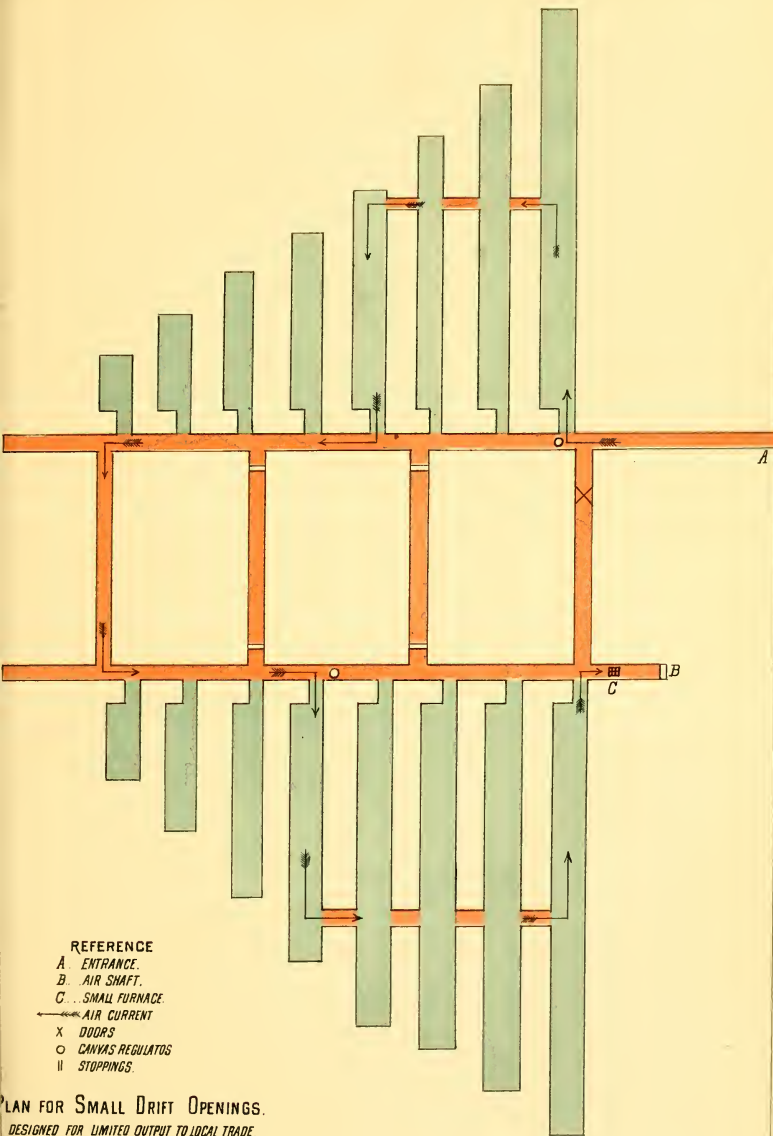
As 2,000 tons, however, is a fair average for the annual output for mines of this class, it is seen that a drift or slope on this plan may be worked for a term of eighteen years.

A shaft opening, however, would have twice the capacity of product which the drift affords, because the entries can be driven both ways from the bottom,

It is assumed that as soon as the rooms are driven to the required limit, the pillars can be drawn back, and that the block of coal between the main entries be taken out last.

The cross-cuts between the entries may be either driven as entries or as rooms. The last one to be maintained as an air-course.

The proper width for the rooms and pillars, and of the pillars, must depend upon local conditions, such as the thickness of the coal and the nature of the overlying and underlying strata, and no uniform rule can be made.



THIRD DISTRICT.

EMBRACING CASS, FULTON, McLEAN, MENARD, LOGAN,
PEORIA, TAZEWELL, VERMILION AND
WOODFORD COUNTIES

JOHN ROLLO, PEORIA, *Inspector.*

Mr. JOHN S. LORD,

Secretary of the Bureau of Labor Statistics of Illinois:

SIR—In compliance with the requirements of the mining laws of the State of Illinois, I herewith submit the second annual report of the third mining district of the State, for the year ending June 30, 1885.

Since entering upon the duties of this office, October 1, 1884, I have visited 191 mines, or 35 more than were reported the preceding year. These additional mines are principally small, located mainly in the counties of Peoria and Fulton. My visits to the mines of the district have been governed largely by the condition in which I have found them. This has necessitated visiting many of them frequently, owing to the negligence of proprietors in making the required improvements. My experience with the owners of larger mines has been of a different nature, as they offer but little objection to the enforcement of the law, and are generally disposed to accept any suggestions leading to safer and healthier methods, and prompt to act upon them.

The number of tons of coal produced in the district	
during the year, was.....	1,810,904
Amount produced last year.....	1,941,881
Decrease for 1885.....	<u>130,977</u>
Number of mines reported this year	191
Number of strippings.....	18
Total.....	<u><u>209</u></u>

Number of mines reported last year	156
Number of strippings.....	16
Total.....	172
Increase for 1885, 35 mines and 2 strippings.	
Number of miners employed during the year.....	4,234
Number of other employes.....	979
Total number of employes.....	5,213
Number of miners employed last year.....	4,235
Number of other employes.....	836
Total number of employes.....	5,089
Increase in number of employes for 1885.....	164
Number of fatal accidents for 1885.....	6
Number of fatal accidents for 1884.....	12
Number of non-fatal accidents for 1885.....	25
Number of non-fatal accidents for 1884.....	42
Decrease in number of accidents for this year.....	23
Number of tons mined for each fatal accident in 1885...	301,817
Number of tons mined for each fatal accident in 1884...	160,476
Number of tons mined for each non-fatal accident in 1885	72,436
Number of tons mined for each non-fatal accident in 1884	45,850
Number of employes to each fatal accident for 1885.....	869
Number of employes to each fatal accident for 1884.....	424
Number of employes to each non-fatal accident 1885....	208
Number of employes to each non-fatal accident 1884....	121

The following is a comparative statement of the out-put of coal for each of the counties comprising this district, for the last two years:

Counties	1884.	1885.
Peoria.....	452,078	515,174
Vermilion.....	629,803	423,860
Fulton.....	298,431	280,005
Logan.....	118,800	172,000
Menard.....	151,749	139,120
McLean.....	125,000	135,000
Woodford.....	129,000	119,740
Tazewell.....	33,590	23,779
Cass.....	3,425	2,225
Totals	1,941,881	1,810,905

It will be seen from the above that Peoria and Logan counties show some gain this year, which can be accounted for in the former, from the more accurate returns and the increased number of

mines recorded, and in the latter county, by the development of the newer mines at Mt. Pulaski and at Lincoln. These have encroached upon the trade formerly supplied by mines in adjoining counties. These gains have been offset by more than a corresponding falling off in other counties, resulting from the depressed condition of the trade throughout the district, and the strike at Danville, which materially lessened the production for the county of Vermilion.

NEW MINES.

There are five new shafts being opened in the district, two in Peoria county, three quarters of a mile west of the Grant and Wilcox mine, on the Central Iowa R. R.; one in Tazewell county, at Wesley City, on the P. & P. U. R. R., and one in McLean county, one mile west of Bloomington between the C. & A., and the I., B. & W. R. R's. This shaft is being sunk by a co-operative company of 180 members, the greater number of them being miners, who organized in April, during the strike at the McLean County Coal Co.'s shaft, at Bloomington. The fifth shaft is being sunk at Sidney, Champaign Co., on the Wabash R. R. The seam here, according to the borings, is six feet thick, and was reached at a depth of 256 feet. The company is composed of several of the leading citizens of Sidney, and John Cook, of Danville, who, being a practical miner, has the sinking in charge.

The buildings at six mines in this district have been destroyed by fire during the past year. The fires at the following mines are believed to have been incendiary: At the Lincoln shaft, Lincoln; at the Junction shaft, Petersburg; at No. 3 shaft, Ellsworth Coal Co., Danville; and at Rutherford's mine, Cuba. The fires in these cases occurred after working hours, and in portions of the buildings where no fires are kept. No definite clue to the perpetrators has been found, though some arrests have been made.

The improvements affected during the past year have been varied, and have involved considerable expense in their completion.

ESCAPEMENTS.

There have been 42 escapements completed during the year; three have been remodeled and five are in process of construction. The deepest escapement shaft sunk this year is that of the Roanoke Coal Mining Co., Roanoke, Woodford Co.; the costliest now being constructed is that of the Citizen Coal Mining Co., Lincoln, Logan Co. This shaft has passed through 25 feet of sand and water, at a depth of 40 feet from the surface, which has rendered the work of sinking difficult and expensive.

FANS.

Ten ventilating fans have been erected in the past year, most of them having taken the places of furnaces. The number of fans in use in the district is 23, and they are all giving excellent results, which no doubt will induce others to put them in, as their superiority

over the furnace in point of economy and efficiency, is being better understood by a class of operators who have heretofore been satisfied with furnaces. The following are the companies which have erected fans:

Ellsworth Coal Co., shaft No. 4, Danville, Vermilion Co., an 8 foot Champion fan.

Newsam Bros., shaft No. 2, Orchard Mines, Peoria Co., a Brazil fan, 10 feet in diameter.

Gorman's mine, Peoria, a 7 foot Brazil fan.

Roanoke Mining Co., Roanoke, Woodford Co., a Brazil fan, 10 feet in diameter.

Greenview Coal Co., Greenview, Menard Co., a fan of their own construction, 10 feet in diameter.

P. P. Chapman, Farmington, Fulton Co., a 7 foot Brazil fan.

Taylor Williams, Norris, Fulton Co., a Moline fan, 4 feet in diameter.

Lincoln Coal Mining Co., Lincoln, Logan Co., a Brazil fan, 10 feet in diameter.

Emerson & Co., Astoria, Fulton Co., a 7 foot Brazil fan.

Citizens Coal Mining Co., Lincoln, Logan Co., an 8 foot fan of their own manufacture.

The ventilation of mines has been very much improved in the past year through the introduction of improved ventilators in some, and by the cleaning and enlargement of the air courses in other mines. Splitting the air current wherever introduced, has also been a great aid in enlarging the volume and improving the quality of the air; but owing to the fact that the greater number of mine managers are not familiar with the methods by which splitting the air current can be accomplished, relief from this source is limited to a few of the larger mines, and can only be introduced in the others as the management becomes more efficient.

Need of further improvement in ventilation is apparent when it is considered that every ton of coal mined necessitates the combustion, on an average, of nearly a pound of powder. The gases liberated therefrom together with the other gases of the mines, of which carbonic acid gas is one, renders the air in many of the mines, especially in the afternoon, after firing, totally unfit for respiration, even when the current is in excess of the legal standard. In view of this fact, and there being no provision in the mining laws of this State for the better ventilation of such mines, I would respectfully recommend a more sweeping ventilating current. By adding 50 per cent. to the present standard and by investing the inspectors with discretionary power to enforce another 50 per cent. whenever the necessity of the case demands it, either from the free use of powder or otherwise, a partial remedy for the evils arising from a vitiated atmosphere will be effected.*

*The changes in the law here suggested were subsequently made by the 34th General Assembly.

SAFETY APPLIANCES.

There have been 13 cages equipped with safety catches and boiler-iron covers, and guards have been placed around 14 openings, while several mine owners have been notified to procure the same. The law pertaining to the use of copper tools has not met with much favor among the miners of this district, and very few were found complying with it. Those not using copper implements were notified to procure them. There are few miners who do not regard the copper tools as safer than iron, the chief objection to their use being their cost, which is now being lessened by the miners clubbing together and ordering direct from the manufacturers, thereby reducing their cost nearly one-half.

Boiler inspection certificates have been received for all the boilers generating steam, around the mines in this district.

STRIKES.

There has been a feeling of dissatisfaction existing among the miners throughout the district, resulting from various causes, traceable principally to the depressed condition of the coal trade. This feeling has culminated at several places in strikes and slight suspensions, nearly all of which have been terminated by the men accepting the terms first offered by their employers. The more noticeable difficulties are the following:

The first strike was occasioned Oct. 7, at Cuba, Canton and Breeds, along the line of the Wabash R. R., by the operators refusing to accede to the demands of the men for a half a cent more per bushel in winter than they had been receiving in the summer, which was three cents per bushel. A. H. Heald settled with his men, without losing time, by reckoning by the ton instead of by the bushel, agreeing to pay 85 cents per ton instead of $3\frac{1}{2}$ cents per bushel, as demanded by the men. The West Canton Coal Co. settled with their men on the same terms Nov. 1, and Breeds' miners agreed to accept the same Nov. 15. The Cuba trouble was settled by the men agreeing to accept the summer price, 3 cents per bushel, and the operators agreeing to furnish powder and oil at reduced rates, these being almost invariably furnished at the mines by the operators. The number of men involved at Cuba was 100, at Canton 35, at Breeds 50.

The miners at Bryant, Fulton county, struck on the 24th of April against signing a yearly contract of prices. Subsequently they signed it, and resumed work May 4. Time lost, three weeks. Number of men involved, 40.

The miners at Bloomington struck April 1 against a proposed reduction of 5 and 10 cents per ton for mining the upper and lower seams, respectively. The company agreed to allow two men in each room instead of three, as formerly, and also to furnish iron track for rooms instead of wood, the advantages thus derived being considered by the company as counterbalancing the cut in prices. The strike ended May 15, the men accepting the terms of the company, after a loss of six weeks' time. The mine was filling up with strangers when the men settled. Number of men involved, 200.

The miners in the employ of the Petersburg Coal Co. struck on the 28th of April, because the company would not recognize a checkweighman appointed by the men at that time. The company claimed that the man chosen was not in their employ, and requested the men to select some one who was, which they refused to do until June 22, when they agreed to resume work, the objectionable checkweighman having left in the meantime. Before resuming operations the company presented a yearly contract of prices for signatures, which was signed without further delay. Time lost, 7 weeks. Number of men involved, 75.

Kramm's miners, at Kramm's Station, Peoria county, struck on the 6th of May to reinstate five men, who were discharged for sending out dirty coal. The result was Mr. Kramm closed up the mine for the summer. Number of men involved, 40.

The miners in the employ of the Ellsworth Coal Co., Danville, struck on the 17th of March to regain 10 cents per ton, which was taken off Feb. 1. The following are the facts relating thereto: The miners of this company had been working under a yearly contract price of 80 cents per ton, which expired Nov. 1, 1884. There being no contract presented by the company for the ensuing year, the price remained the same until Feb. 1, 1885, when the company notified the miners of a reduction of 10 cents per ton, thus making it 70 cents per ton, the same as is paid to the Grape Creek miners in the same vicinity. This was accepted by the men after a two days' parley, and they were working on this scale when the Staunton and Mt. Olive miners, working for the same company, came out on a strike and demanded a suspension of the company's mines at Danville. On the 17th of March the miners at Danville accordingly made a demand for a restoration of the 10 cents per ton lost Feb. 1. The company refused to accede to their wishes, which resulted in a prolonged but quiet strike, the solution of which is still pending, with no prospect of an immediate settlement. The number of men involved in this instance was 321.*

Following this will be found brief mention of the mines of each county, and of the improvements which have been inaugurated, or completed where they have been found necessary.

Finally, a list is given of those who have been killed or injured during the year in this district, while pursuing their vocations in and about the mines.

All of which is respectfully submitted,

JOHN ROLLO,

Inspector 3d district.

VERMILION COUNTY.

In this county there have been in operation in the past year 39 mines, and 16 strippings, which have produced 423,860 tons of coal, from seams Nos. 6 and 7 of the Illinois section. The former has

* This strike has since been settled upon the company's terms.

an average thickness of six feet, eight inches, and is worked somewhat extensively at Grape Creek, five miles south of Danville. Sand bars are occasionally met with in this seam, that cut out the coal entirely, and which invariably give off large volumes of water, necessitating the use of larger pumps than are generally used in this district, for the draining of mines. Seam No. 7 will average six feet in thickness and is very regular, has much less water to contend with, and is being worked extensively at Danville and other places north and west of that point. The strata overlying both seams bear a striking resemblance to each other, both being soapstone of a slipping nature, not affording a safe roof, and involving great cost for timber where the coal is taken out. The following are the more important mines in the county.

The Ellsworth Coal Co. is operating four large mines within a radius of two miles from Danville.

MINE No. 1.

This is a drift, the pillars of which are nearly drawn, but an opening has been made in the five acres adjoining, belonging to W. Reese, which will prolong operation. The mine was found in good condition.

James Jones, Sup't; W. D. Reese, Mine Manager.

MINE No. 2.

This is a shaft 74 feet deep, with general equipment good. The ventilating current in this mine was split so as to air three separate sections, but there was not a large enough volume. The fan located at the air shaft, being a four foot "Murphy," was too small as the new shaft No. 4 was also depending on it, the two shafts being connected by an entry one-third of a mile long. This has been remedied by the company. They have sunk an escapement shaft at No. 4, and erected an eight foot Champion fan on top, which will ventilate No. 4 and part of No. 2, and give all the air necessary.

James Jones, Sup't; D. W. Murray, Mine Manager.

MINE No. 3.

This is a shaft 103 feet deep, located on the I. B. & W. R. R. This mine was in good order, aired with two separate currents, furnishing 240 cubic feet of air per man on the north split, and 123 cubic feet per man on the south. A fire occurred at this mine on the night of May 6, which consumed all the frame work on top, and several feet of curbing in the shaft. The origin of the fire is unknown. No effort has been made to rebuild.

Jeremiah Morin, Sup't and Mine Manager.

MINE No. 4.

This shaft was originally sunk to a seam 310 feet deep, which has since been abandoned, and the seam now worked is the same

as at the other mines, 71 feet deep. When visited there were few rooms being worked. The ventilation of this mine is assured by an eight foot Champion fan on top of air shaft.

James Jones, Sup't and Mine Manager.

THE GRAPE CREEK COAL AND COKE CO.

This company is operating five mines, located in and around Grape Creek, five miles south of Danville, on a branch of the C. & E. I. R. R. Nos. 1, 2 and 4 are drifts, not likely to last much longer, as the pillars are now being drawn. The ventilation and roadways were found good in each of them.

MINE No. 3.

This is a shaft 18 feet deep, sunk at the base of a hill, the workings of which extend nearly one mile into the interior. The ventilation is good, maintained by a furnace, which consumes on an average $2\frac{1}{2}$ tons of coal daily. The equipment of the mine is good. Double doors have been placed on the main entry at the bottom, to prevent the air from going direct to the furnace, before reaching the men.

John Beattie, Sup't; T. J. Roberts, Mine Manager.

MINE No. 5.

This is a shaft 125 feet deep, sunk on the higher lands, and has a good equipment throughout. Ever since the explosion from fire-damp in this mine, in 1883, a fireman examines the mine every morning with a safety lamp, before the men go down, but seldom detects any firedamp. The volume of air passing in this mine measures 31,500 cubic feet per minute, produced by a Champion fan 6 feet in diameter, each side of the mine being aired with separate currents well distributed. There are five mining machines of the Yock pattern operated in this mine, which are fed from a compressor from Port Carbon, Penn., having a steam cylinder 24x36, and air cylinder 22x36. The operator of each machine receives \$2.25, and shovelers \$1.75 per day, and they are expected to mine two rooms 25 feet wide and four feet undercut, which will turn out about 40 tons of coal per day. The loaders receive 40 cents per ton for loading and blasting. Three men are engaged throwing back dirt minings after the machines have finished mining the room, each being paid \$1.50 per day. Six men are employed timbering and laying track in rooms, three of them receive \$2.00 per day, and the others being considered helpers, are paid \$1.50 each.

John Beattie, Sup't; David Watkins, Mine Manager.

THE KELLY MINE.

This is a shaft 96 feet deep, located two miles southwest of Grape Creek, on the C. & E. I. R. R. This mine was in poor condition when first visited. The entries were unsafe for travel, requiring much timber, and the traveling road to the escapement shaft was

obstructed. There were no safety catches nor covers on cages, and the air was poorly distributed. On measuring the air at the bottom of the down-cast it was found to be 7,100 cubic feet, which was ample if properly distributed, but on trying to get a measurement at the face, there was not enough to overcome the friction of the instrument, the air having leaked through the stoppings before reaching the men. I notified Mr. Kelly as to what improvements were necessary, and on my third visit found them completed, except safety catches, which will be put on as soon as new cages and stronger guides are put in place, which have been ordered. In the meanwhile the men were obliged to climb the escape shaft. I have since learned by letter from Mr. Kelly that new guides, cages and safety catches are put on, and also double doors at the bottom.

Michael Kelly, Proprietor and Superintendent; John Dougherty, Mine Manager.

There are six shafts and one slope, supplying local trade, situated between Catlin, on the Wabash R. R., and Oakwood, on the I., B. & W. R. R., operated by Shock, Hodges, Emmett, France Bros., Woodward, Sr., Woodward, Jr., and Thomas. The mines are ventilated by furnaces on top of shafts, connected by drift from air chambers, but the air was poorly distributed and heavily charged with carbonic acid gas. The operators were notified to improve the ventilation by closing up old rooms, and by keeping the furnaces fired, which had been very much neglected. They were also instructed to place guards around openings. All of them have now secured escapements except V. Shock, who had allowed his shaft to cave in for lack of curbing, prior to my visit, and he is now engaged in opening it. These mines all have sheds, in which are stored from 500 to 1,000 tons of coal during the summer, for which is found a ready sale in the fall. Daniel France's mine has not been worked any during the year, owing to the lack of an escapement and some other improvements.

Phillips and Tucker's and Samuel Swisher's shafts are located ten miles north of Danville, and depend on local trade. The former have finished an escapement, while the latter is sinking one, and has it nearly finished. They were notified to place guards around shaft openings. The ventilation is good in Phillips and Tucker's mine, but poorly conducted in Swisher's. The best of the small mines around Danville is J. E. Lloyd's. He has his mine in splendid order, working by double entry, and with good ventilation, displaying a management throughout that is worthy of imitation by those adjoining.

TAZEWELL COUNTY.

This county contains six mines, which have produced 23,779 tons of coal, all from seam No. 5, which averages four feet five inches in thickness. They have good roofs, and very little water to contend with.

HOPE MINE.

This is a shaft 120 feet deep, located two miles east of Pekin, on the C., P. & S. W., and I., B. & W. railroads, and is operated by Louis Grant & Sons. The system by which this mine is worked renders it very difficult to maintain good air courses and hauling roads, as the entries or roadways are driven 15 feet wide, requiring a great deal of timber and labor to keep them secure. The ventilating current was found to be largely in excess of the legal standard, and was produced by a seven foot fan of their own make, located at the bottom of the escape shaft, but the quality of the air was poor, on account of the black-damp that is emitted from the old workings, which are very extensive. Improvements that were about to be made were prevented by fire, which occurred on the night of December 7, 1884, consuming all the top buildings, including engine and boiler house, dumps and railroad chutes. Estimated loss \$8,000. The fire is supposed to have originated from a spark from one of the locomotives on the I., B. & W. R. R. The place was rebuilt and put in operation May 6, 1885, by Louis Grant, who leased it from D. M. Alexander, of Pekin, proprietor and former operator.

Louis Grant, Manager.

HAWLEY'S MINE.

This is a shaft 90 feet deep, situated four miles south of Pekin, on a switch from the P., D. & E. R. R. The operators of this mine have had trouble with standing water in six acres of old workings adjoining, but have succeeded in getting it out by tapping in several places. Otherwise the mine is in good condition. Guards had been put around the shaft opening, and the managers were notified to put a brake on drum, and safety catches on cages.

P. Connars, Mine Manager.

LEDTERMAN MINE.

This is a mine 90 feet deep, located two miles southeast of Pekin, supplying local trade, and is a poorly managed place. The operator was restrained from working more than one man from May 9, until he had secured an escapement by connecting with an old shaft 300 feet distant, and repaired his hoisting shaft, which was unsafe. I have since learned that the escapement is completed. The ventilation in this mine was very poor, but will be somewhat better now that the connection between the two shafts is made. Guards have been put on shaft opening, and the operator notified to put in new cages and safety catches.

Rundle & Goold's mine, adjoining the above, was in fair condition.

In Dissman's mine, three miles east of Pekin, the air was found to be very bad. The operators were notified to hang doors to conduct the air properly, and to fire the furnace, and also to put guards around the opening.

Millard's mine, at Hulton, is shut down because lacking an escapement.

The Rushia mine was found to be in fair order, but rather wet on the hauling roads.

WOODFORD COUNTY.

There are two mines in this county working seam No. 2, which averages two feet five inches in thickness, and has produced 119,740 tons of coal in the past year.

THE CHICAGO AND MINONK COAL CO.

This shaft is 550 feet deep, located at Minonk, on the lines of the I. C. R. R. and the C., P. & S. W. R. R., and worked by long-wall. The coal face is nearly three-fourths of a mile from the bottom of the shaft. Here are fine facilities for rope haulage, and it is contemplated putting a rope in to haul from two different sections. The condition of this mine below was good, though the ventilating current, produced by a twelve-foot fan, was hardly up to the legal standard. A subsequent visit found it much improved, from having had a number of openings left for air to circulate through, instead of one, as formerly, and the distance has been shortened. The cleaning and enlargement of the air-courses leading to the upcast, when finished, will give good results for the labor and money expended. The escapement shaft at this mine is located 100 yards from the hoisting shaft, but is so situated with frame buildings adjoining, in connection with tile and brick manufacture, that it would be greatly endangered in the event of fire. I recommended a fire-proof building being erected around the escapement shaft. A brick boiler house is also being constructed. The erection of these two buildings, with the fire pumps, hose-piping, and the abundant supply of water at command, will reduce the danger from fire at the mine to a minimum. There were eleven boilers generating steam for the mine and for the brick and tile works. These have now been reduced to eight, and tubular boilers with 39 tubes each have been substituted for the two flue boilers.

Miner T. Ames, Proprietor and Superintendent.

D. McDonald, Mine Manager.

THE ROANOKE MINING CO.

This company has a shaft 480 feet deep, situated at Roanoke, on the C., P. & S. W. R. R., and worked by long-wall. The ventilation in this mine has been very defective, but will be good now that the escapement shaft is completed, with a ten-foot Brazil fan in operation at the top.

Joseph Belsley, Superintendent.

John Grey, Mine Manager.

LOGAN COUNTY.

There are three shafts in this county working seam No. 5, which averages four feet ten inches in thickness. It is somewhat impaired by clay seams and "horse-backs," and reached at a depth of from 265 to 360 feet. There have been 172,500 tons of coal produced in the last year in this county.

THE LINCOLN COAL MINING CO.

This is a shaft 280 feet deep, located at Lincoln, at the junction of the C. & A. and Wabash railroads. When first visited, this mine was in a deplorable condition, showing very poor management. The roadways were badly timbered and narrow. There were 7,920 cubic feet of air per minute passing for 114 men and 12 mules, and this was highly charged with carbonic acid gas and carbonic oxide, which, in the afternoon after firing, was almost unbearable. Subsequent visits found the mine much improved by the erection of a Brazil fan ten feet in diameter, located at the bottom of the air chamber of the shaft, producing 21,000 cubic feet of air, being 13,000 cubic feet more than was found at first visit. The roadways had been retimbered and the area enlarged, and an effort had been made to turn air around working places by the use of screens on entries. Section 16 of the mining law was being violated, but its requirements are now filled. The frame work around the top of the shaft was burned down April 16, at two o'clock in the morning. Eight men in the mine at the time were safely hoisted out at the escapement shaft, one mile distant from the main shaft. The pit-head frame was rebuilt and in operation two weeks from the date of the fire, the cause of which is unknown.

Frank Frorer, Superintendent.

James Daily, Mine Manager.

THE CITIZENS' COAL MINING CO.

This shaft is 265 feet deep, located one mile east of Lincoln, at the junction of the P., D. & E. and Wabash railroads. It has been in operation since September, 1883. The equipment of this mine is first-class throughout, and it is abundantly ventilated by an eight-foot fan of their own construction. The top buildings at this mine are covered with corrugated iron, and the proprietors are now engaged in sinking an escapement shaft 200 feet from hoisting shaft, which will in all probability be completed some time in October, the sand bed having been passed in safety.

Henry Ahrens, Superintendent; John Jones, Mine Manager.

THE MT. PULASKI COAL CO.

This is a shaft 360 feet deep, located within the corporate limits of Mt. Pulaski, on a branch of the Illinois Central R. R. This mine is very difficult to work, owing to the coal being streaked with dirt seams. The mode of working has been changed from pillar and room

to long-wall, which is now being carried on successfully. The ventilation in this mine is good, produced by a fan of their own make, after the Guibal pattern. An escapement shaft is being sunk, which would have been completed in September, but will be delayed by the caving in of the shaft near the top where the material is soft, the curbing being too light to resist the pressure.

H. C. Suttle, Superintendent.

James Small, Mine Manager.

CASS COUNTY.

This county has fallen off in the last year, only one shaft now being worked instead of two, as during the previous year. The seams reached are probably Nos. 5 and 2, both being two feet six inches in thickness. Coal produced this year, 2,225 tons.

THE VIRGINIA COAL AND WATER CO.

This company is composed of several of the merchants of Virginia, who at a cost of \$12,000 sunk a shaft to a depth of 205 feet, at the junction of the Ohio & Mississippi and Wabash railroads. The seam being only about two feet and a half thick, and opened with single entries, and worked by the pillar and room system, it was found impracticable to compete successfully with the thicker coal of Springfield and other collieries in the vicinity, which was shipped to this point and sold for less than it cost to produce the coal at this mine. The company on being required to sink an escapement shaft and timber the hoisting shaft more securely, and to make other improvements, having realized nothing from the investment, concluded not to sink any more money in it, and shut down December 11, 1884. The Athens Coal Co., at Athens, two months later, had the water taken out of this mine with a view of working it on the long-wall system, but on examining it concluded not to attempt it. The coal is of a fine quality, resembling No. 2 seam, the stratum overlying the coal being soapstone of considerable thickness, with fire-clay underneath the coal.

THE CASS COUNTY COAL CO.

This is a shaft 205 feet deep, located at Ashland, on the C. & A. R. R., the property of a coöperative company of six miners. The seam averages two feet and a half in thickness, with two feet of black slate overlying, which resembles that of No. 5 seam. The method of working has been changed from pillar and room to long-wall, but it has not been worked sufficiently to tell whether it can be carried on profitably or not. The sales are confined to local supply as yet, but the company is endeavoring to get a switch from the C. & A. R. R., calculating to ship coal, as the local sales do not afford business enough. They are sinking an escapement shaft, and intend putting in a furnace or fan to give ventilation when they start up early in the fall.

J. J. McGovern, Superintendent and Mine Manager.

McLEAN COUNTY.

THE McLEAN COUNTY COAL CO.

This is a shaft located at Bloomington, at the junction of the C. & A. and I. B. & W. railroads. This mine having received such favorable mention by my predecessor, with such full description of the workings, I will simply state by way of endorsement that I found every thing in connection with it all that could be desired. The managers spare nothing that will tend to make it safer and healthier. The ventilation, while good, will still be improved by a split in the air current, which was nearly completed on my last visit, May 26. In addition to this the proprietors are preparing to move the hauling engines below to the other side of the shaft, where the heat arising from the machinery can be utilized in the upcast, instead of heating the air at the intake, as is now the case. The company realizing that the upper seam is not as saleable as the lower, owing to its hardness which necessitates considerable labor in breaking it up for steam use, have erected a steam breaker to crush the coal to four different sizes, the largest of them being four and one-half inches. The various sizes are conveyed by chutes leading from the revolving screen to bins capable of holding 500 tons of prepared coal, which are so arranged that wagons can be quickly loaded. The breaker is worked by a 15 inch belt, connecting with the belt pulley on the engine. The whole plant is incased in a building 40 feet high, 75 feet long and 18 feet wide.

W. W. Stephenson, Sup't; Thos. Radford, Mine Manager.

MENARD COUNTY.

In this county there have been 7 mines in operation in the past year, and they have produced 139 120 tons of coal, from No. 5 seam, which averages 5 feet 6 inches in thickness.

THE PETERSBURG COAL CO.

This company has been operating two shafts. No. 1, or the north shaft, is located two miles northeast of Petersburg, on the C. & A. R. R., and is 65 feet deep. The workings of this mine are very extended, having been in operation fifteen years, and have been carried on for the most part by double entries, but the company is now driving single entries with brattice cloth for conducting the air. The entries are driven 9 feet wide and are about 100 yards apart, running parallel, and are headed off, say, every 200 yards, by an entry at right angles connecting them. This mine is very difficult to work, from having so many "horsebacks" and a poor roof, necessitating an unusual amount of heavy timber to keep the hauling roads safe. The air was split and was very poor on the west, but it has since been improved. The split on the north was very good, as the men received the air direct from the escape shaft on its way

to the furnace, at the bottom of the shaft. The engine house at this mine was burned down February 14, but was rebuilt and in operation again March 15.

D. Stedder, Superintendent and Mine Manager.

NO. 2 OR JUNCTION SHAFT.

The buildings at this shaft were burned down on the night of April 27. The company had just completed several improvements, among them being 20 feet of new curbing at the top of the shaft. The new curbing being dry was readily consumed by the fire, allowing the shaft to cave in. It was first thought that the fire originated at the furnace below, but on going down the escape shaft to the furnace, nothing was found to confirm the belief. The furnace is located 60 feet from the shaft bottom, with 20 feet of brick arch extending from the furnace towards the air chamber. The mine was worked on the same principal as the foregoing, but was in better condition, owing to its being a newer mine. No effort has been made to rebuild.

THE ATHENS COAL CO.

This company is operating a shaft 225 feet deep, at Athens, on the Wabash R. R. Ventilation in excess of the requirements of the law is maintained by a furnace at the bottom of the shaft. Doors have been placed on the entries instead of screens, and an effort has been made to turn the air around the working faces by the use of screens at the mouth of the rooms. The escape shaft being small and wet is now being enlarged and made dry. I required more effective safety catches to be put on the cages, which were ordered, and are doubtless now in use.

James Eddy, Superintendent.

James Pierson, Mine Manager.

THE SOUTH VALLEY COAL CO.

This shaft is located at the southern extremity of Petersburg, on the line of the Wabash R. R., and is 68 feet deep. Only 29 men were employed in winter and 6 in summer, there being only two entries in progress. These were safe and well ventilated by a furnace at the top of the escape shaft, which is small and wet. The company was notified to enlarge it and overhaul the ladders.

J. C. Cabanis, Superintendent.

Thomas Ackford, Mine Manager.

SWEET WATER MINE.

This is a local supply shaft 170 feet deep, located at Sweet Water, three miles south of Greenview, and everything about it is in splendid order.

Wm. Parker, Proprietor and Manager.

MCDUGAL AND GOLDEN MINE.

This is a shaft 73 feet deep, located one mile east of Petersburg, supplying local trade. They have secured an escapement by building the furnace on the top of the furnace shaft. Guards have been placed around the pit opening.

THE GREENVIEW COAL CO.

This mine is located at Greenview, on the C. & A. R. R., is 100 feet deep, and operated by a joint stock company with several miners interested. A fan 10 feet in diameter, of their own construction, has been substituted for the furnace, and is giving good results. They are now preparing to split the air. The escape shaft being small and very wet the company is preparing to sink another, which will, when completed, raise this mine to the rank of first class.

John Wadsworth, Superintendent and Mine Manager.

FULTON COUNTY.

In this county there have been 45 mines in operation in the past year, which have produced 280,005 tons of coal, from seams 1, 5, and 6. The first is being worked by four small drifts one mile south of Lewistown, which are but poorly managed.

EMERSON & Co.'s MINE.

This is a shaft 80 feet deep, located about one mile west of Astoria, on a switch from the St. Louis Division of the C., B. & Q. R. R. The condition of this mine was found to be good, with abundance of air well distributed, and each side ventilated separately. A seven-foot Brazil fan has been substituted for the furnace.

John Skinner, Superintendent.

Alex. Jenkins, Mine Manager.

There are two country banks adjoining the above. One has not been in operation this year. Chocolate & Bectell, proprietors of the other, have sunk an escapement shaft. They were also notified to improve the ventilation by building a furnace.

There are also two small mines one and one-half miles east of Ipava, on the C., B. & Q. R. R., operated by E. Miles and R. Rodiss. The former has abandoned his shaft and started a drift. The latter has secured an escape, and is otherwise in good working order.

THE BRYANT COAL CO.

This is a shaft 40 feet deep, located one mile northeast of Bryant, on the C., B. & Q. R. R. This mine gives a great deal of trouble

and has a bad roof. The ventilation is good, maintained by a fan four feet in diameter, running 400 revolutions per minute. Safety catches have been attached to cages.

Eugene Smith, Superintendent.

James Watts, Mine Manager.

ST. DAVID MINES.

There are two mines at this place, owned and operated by Taylor Williams. The roof in these mines is very fragile, and in falling it liberates water very freely, making the roads very wet, the drainage being defective. Otherwise they are in good condition, with good ventilation from an eight-foot fan, located at No. 1, the older mine, which ventilates the newer mine also, they being connected by an entry a third of a mile in length. I directed safety catches and covers to be put on the cages at the new mine, also a brake on the drum.

W. J. Spencer, Superintendent.

Samuel Swisher, Mine Manager.

THE WYMAN COAL CO.

This is a slope, located about half a mile northwest of St. David. It was shut down in April for want of trade. It was in good condition, and an escapement had been secured by driving out to the surface.

J. M. Armsteid, Proprietor and Superintendent.

Hugh Ritson, Mine Manager.

HEALD'S MINE.

This shaft is 76 feet deep, half a mile south of Canton, on the C., B. & Q. R. R. It was found in good order, ventilated by a five-foot fan. There being no drum on hoisting shaft, the owner was notified to attach one.

A. H. Heald, Proprietor and Superintendent.

Thos. Simmons, Mine Manager.

THE WEST CANTON COAL CO.

This is a shaft located two miles west of Canton, on the Wabash R. R., 80 feet deep. The escape shaft at this mine was not available, owing to the crumbling away of the wall, which was subsequently overhauled and made safe. This mine formerly employed about 75 men, the highest number now employed being only about twenty in winter and seven in summer, which is gradually becoming less for lack of trade. The ventilation was very unsatisfactory, as it was produced solely from the exhaust from a steam pump.

J. B. Allen, Superintendent.

Thos. Luckley, Mine Manager.

CUBA UNION COAL CO.

This mine is located at Cuba, on the Wabash R. R., and furnishes coal exclusively for locomotives on the railroad. This being an old shaft, the engine and boiler were not set with a view of complying with the present laws regulating such matters, as they are too close to the shaft opening. The traveling road to the escape shaft was impassable, but was subsequently cleared up. The ventilating current measured at the downcast 150 cubic feet per man, but was highly charged with black damp, coming from old waste before reaching the men.

Wm. Conant, Superintendent.

Wm. Nicholson, Mine Manager.

Jas. Stirrat is operating a shaft one mile northwest of Cuba. The product of this mine is hauled by mules over a tramway to the dump, on the Wabash railroad. The condition of this mine was fair. The roadways were wet but secure, and the ventilation good. Guards have been placed around the shaft opening.

Jas. Stirrat, Proprietor and Superintendent.

Thos. Jones, Mine Manager.

RUTHERFORD MINES.

These are two drifts, located two miles north of Cuba, on a switch from the Wabash railroad, developing seams 5 and 6, which are here only eleven feet apart. The latter seam has a thickness of six feet and is very regular, with a limestone roof affording safe mining, but the ventilation was defective, depending on natural forces. The owners were notified to improve it by the erection of a furnace.

The other drift, located about 200 yards from the above, has been improved by fixing the air stoppages and making a traveling way to the escape drift. The coal dump at this place, the barn and two mules were consumed by fire on the night of May 18. The origin of the fire is unknown.

Wm. Rutherford, Jr., Superintendent.

Geo. Rutherford, Mine Manager.

Bateman's mines, Nos. 1 and 2, two and one-half miles north of Cuba, on the Fulton County Narrow Gauge railroad, were in splendid order, abundantly ventilated by furnace.

S. H. Bateman, Supt.; Wm. Godfrey, Mine Manager.

P. P. CHAPMAN'S MINE.

This shaft is located at Farmington, on the C., B. & Q. R. R., at a depth of 165 feet. The condition of the mine has been greatly improved during the past year, the owners having cleaned and enlarged the air courses, fixed the air stoppings and doors, and erected a seven foot fan. This mine makes black-damp freely, but when

the fan is kept running the air is good. More effective safety catches have been applied to the cages, and guards have been placed around the openings.

Jefferson Bourbridge, Supt. and Mine Manager.

NORRIS MINE.

This shaft is located at Norris, on the C., B. & Q. R. R. The seam worked here is No. 6, reached at a depth of 125 feet, and averages 4 feet 7 inches in thickness, when clear of "horse-backs," which are not as numerous here as is usual in this seam. This mine has been operated by so many different parties that it was steadily going from bad to worse, and I was about to apply for an injunction to have it closed as being unsafe, when it was leased by Mr. Taylor Williams, and he is now fitting up the whole place in accordance with the requirements of the law. A four foot fan is now furnishing plenty of air, there being only 25 men engaged in the mine. The amount of air will be increased as the improvements progress.

W. J. Spencer, Supt.; Wm. Evans, Mine Manager.

HINDSON MINES.

These are two drifts, located at Breeds, on the Wabash railroad. The ventilation was good in both mines. I ordered an escape shaft to be sunk at the newer mine, No. 2, and the curbing and ladder to be renewed at the older mine, No. 1. Also that the traveling way leading to it should be made passable by draining the water out. I am informed by letter that the improvements are completed.

The shaft buildings at the mine operated by Churchill & Oran, at Fiatt, on the Fulton County Narrow Gauge railroad, were burned down Dec. 17. It was supposed they caught fire from the furnace under the boiler which was used to generate steam for pumping purposes, the mine being very wet. There has been no attempt made to rebuild.

Carpenter & Lovejoy's mine is four miles north of Cuba, on the Fulton County Narrow Gauge railroad. They have made an escape-ment by drifting out, and have constructed a furnace, but it is too small. I notified them to build a larger one, and to have a section of the upcast enlarged, it being only a ten-inch tube.

PEORIA COUNTY.

Having had the valuable assistance of Mr. James Taylor, inspector of mines for Peoria county, a more thorough canvass than usual has been made of this county. This has resulted in the enrollment of 85 mines of all kinds, or 22 more than were reported last year. The aggregate out-put for the county has been 515,174 tons, derived from seams Nos. 2, 5 and 6. The more prevalent seam is No. 5, but No. 2 has been opened and worked this year by

Newsam Brothers, at Orchard Mines, and No. 6 is the characteristic seam in the vicinity of Elmwood. The more important mines of the county are the following:

JOSEPH COLLIER'S MINE.

This is a drift, located four and one-half miles southwest of Peoria, on the P. & P. U. R. R. I found this mine safe and well ventilated, but there was no available escapement. This difficulty was obviated by putting ladders in the old shaft, 200 yards from the mouth of the drift, and cleaning up the traveling way to it.

James Wooland, Mine Manager.

JOHN GORMAN'S MINE.

This is also a drift, located about 600 feet from the foregoing. The furnace at this mine has been replaced by a Brazil fan, seven feet in diameter, at the mouth of the drift, thereby getting the use of the furnace shaft for an escapement. This mine and the above have the tail rope in operation, hauling the coal from the workings to the dump.

P. Keenan, Mine Manager.

THE PEORIA CO-OPERATIVE COAL CO.

The mine of this company is a slope, located about one-third of a mile southwest of the above mine, operated by a co-operative company of 37 miners, who leased and opened on 40 acres in the early part of the summer of 1884. No one is admitted to membership in this company unless he belongs to the Knights of Labor organization, and those outside the order are refused employment. The mine is in good condition, having a furnace and an escape shaft. They are now getting a good share of the trade.

James Dooley, Supt. and Mine Manager.

CHAPMAN & LITTLE'S MINE.

This is a shaft 40 feet deep, located on the side of a hill adjoining the above. It was in good condition, and ventilated by a seven-foot Brazil fan.

Matt. Nettlehouse, Mine Manager.

SHOLLS' MINE.

This is a drift, one and one-half miles north of Hollis, on the P. & P. U. R. R. The ventilation in this mine was anything but good when first visited, but is now very much improved by the cleaning and enlarging of the air-ways. New doors have been hung and the air-stoppings repaired, and the proprietors are about to erect a 10-foot Brazil fan, and are also remodeling the drift in order to get the use of a tail rope.

James Sholls, Superintendent; Joseph Sholls, Mine Manager.

ORCHARD MINES.

There are two mines at this place, operated by Newsam Brothers. One of the mines is a drift, and is nearly worked out, while the other is a shaft, which has only been in operation since June, 1884. This is seam No. 2, opened and worked on the long-wall system. The coal averages 2 feet 4 inches in thickness, is reached at a depth of 152 feet by two shafts 84 feet apart, the size of opening being $7 \times 5\frac{1}{2}$ feet, with one cage in each. The engine is located between the openings, and hoists coal from both shafts. The equipment is neat, compact and substantial, but I think the coal could have been handled more economically with both cages in one larger shaft. The probabilities are that this company will experience some difficulty in competing with the thicker coal adjoining, unless they can profitably dispose of the fire-clay underlying, which is considered of very good quality for brick and tile manufacture. The ventilation in this mine is splendid, produced by a Brazil fan 10 feet in diameter.

R. Newsam, Superintendent and Mine Manager.

THE GLASSFORD COAL CO.

This opening is a shaft 125 feet deep, located at Glassford, on the Wabash Railroad. The company has been prospecting a fault, but has now abandoned the place, there being no coal to justify sinking an escape shaft. The probabilities are that the company will open in a new place, as the coal is regular in other mines within one mile of the above, in which case the present shaft will be used as an escapement.

LANCASTER MINE.

This drift is located one mile and a quarter south of Glassford, and was in splendid order. The product of this mine is shipped by boat to points along the Illinois River.

MCNEIL'S MINE.

This is a slope, located one mile west of Mapleton, on the Wabash Railroad. It was poorly managed, but an escapement has been sunk and the owner notified to construct a furnace to improve the ventilation.

WALKER'S MINE.

This is also a slope, on the opposite side of the railroad from the foregoing. It was fairly ventilated, but the airways were very much blocked with timbers to keep up the roof, it being in a very poor condition. The escape shaft is badly located, and the proprietors intend putting down another nearer the working face.

BUCKEYE COAL AND COKE CO.

This is a new company that has opened a slope one-half mile north of the above mines. They have secured a railroad switch and

are now engaged driving entries preparatory to starting up in the fall. This company is talking of erecting coke ovens, with a view of coking the coal, having made tests with satisfactory results.

There are about twenty mines located within a radius of three miles west of Peoria, along the Kickapoo Creek, the most important of them being the Grant & Wilcox and Millard & Woolslaag mines, on the Central Iowa R. R., which were found in good condition. The others are small local supply drifts, nature having supplied them with safe roofs, but they are poorly managed, depending mainly on natural forces for ventilation. Those having furnaces seldom have them fired. Escapements are provided for all of them except the Peoria Limestone Coal Co. and Barneywaldt's mines, which were shut down February 6 because the owners failed to supply them. The worst of them are those on the Kidder estate, under the supervision of E. Allen. He was notified to construct furnaces to improve the ventilation.

THE BURLINGTON COAL CO., OR DR. WILKINSON'S MINE.

This is a slope, located at Edwards, on the C., B. & Q. R. R. This mine has been worked extensively, and shows bad management throughout. No narrow entries, except one main entry, are driven in this mine, as rooms 15 feet wide with pack-walls in the centre, are considered by the company to be more economical. These afford very unsatisfactory air-courses, as the walls are very carelessly built, allowing the air to escape. In one of these "room entries" I measured the air at the entrance and found 2,500 cubic feet, while 40 yards further on there was no current whatever, as it had all escaped through the crevices in the pack-walls. I recommended narrow entries and a larger furnace, and notified the proper person to convey the air to where the men were working.

Dr. Wilkinson, Proprietor and Superintendent.

William Reynolds, Mine Manager.

KRAMM'S MINE.

This is a drift, located at Kramm's Station, on the C., B. & Q. R. R. This mine was in good condition and worked on the double-entry system. An escapement shaft was begun by my direction, which is now completed.

Charles Anderson, Mine Manager.

WANTLING & HOWARTH'S MINE.

This is a drift, located at Edwards, and is in splendid order, with abundance of air well distributed.

William Dodd, Mine Manager.

THE ELMWOOD COAL CO.'S MINE.

This is a shaft 60 feet deep, situated one mile and a half southwest of Elmwood, working seam No. 6, which averages 4 feet 6 inches in thickness and is very regular. With the exception of

wet roadways the mine was in fair condition, the ventilation having been improved by placing a large stack over the furnace shaft. The product of this mine is conveyed to the dump on the C., B. & Q. R. R., by two dummy engines.

W. E. Phelps, Superintendent.

Fred. Brown, Mine Manager.

Hicks & Co., and Anderson, were operating two shafts one mile north of Princeville, on the R. I. & P. R. R., the seam being No. 6 and very irregular. Hicks & Co. shut down on being notified to sink an escapement shaft, while Anderson is going on to construct one.

The following mines are situated within a radius of 5 or 6 miles north and northeast of Brimfield: Thos. Johnston's, Philip Tulley's, John Tulley's, G. Smith's, Joseph Wilford's and Hugh Wynn's. They are all working seam No. 6 and supplying local trade. The places are poorly ventilated and worked principally in the winter. Several of them have escapement shafts and the others are preparing to sink them.

HANNA COAL CO.

This company is operating a mine situated at Hanna, on the Central Iowa R. R., 240 feet deep to the lower seam No. 5, and is working No. 6 seam also at a depth of 170 feet. The buildings at this mine were burned to the ground in May, 1883. They have been fitting it up during the past year and sinking an escapement shaft. The air currents of this mine were very sluggish, depending on natural forces, but the company is contemplating the erection of a fan this fall.

Jas. McTaggart, Mine Manager.

FATAL ACCIDENTS.

Augustus Lewis, a single man, 24 years of age, employed as a dirt hauler, at No. 3 mine, of the Grape Creek Co., was caught between a car of coal and the entry rib, and was so severely crushed, that he died the second day after, on October 31st.

John Williams, a married man, 23 years of age, and having three children, employed at No. 2 mine of the Grape Creek Co., was instantly killed by a fall of the roof while engaged in drawing pillars on the 19th of December. He had finished tamping his shot, and was cleaning up preparatory to firing when the rock fell.

Edward B. Walker, a trapper boy, aged 15, was instantly killed at the Bryant shaft, Fulton Co., by a descending cage while attempting to cross the shaft bottom, on December 15th. There is a good traveling way around the bottom of the shaft but it is rarely used by the men, who seem to prefer to take the risks under the cages. Another victim to this dangerous practice was the cager, who was seriously injured at the same place two weeks later.

John Luckey, a married man, 31 years old, having three children, the engineer for the West Canton Coal Co., Fulton county, was caught in the fly wheel and killed January 22d, while attempting to adjust the belt to the pulley while his engine was in motion.

Adam Forbes, a married man, 33 years of age, a miner at the Hanna City, Peoria county shaft, was killed on the 4th of April, by a fall of the roof at the working face. The place was apparently well supported with props, but about five tons of rock fell without warning.

John Rowley, a married man, aged 21, fell down the shaft, a distance of 215 feet, at Athens, Menard county, on the 9th of June, and was instantly killed. He was engaged at noon in some repairs about the cage. There was no one present and it is not known how the accident occurred. The finding of the coroner's jury was accidental death. He leaves a young widow, having been married only two weeks.

NON-FATAL ACCIDENTS.

At the Glassford mine, Glassford, January 8. E. Maben, a married man 28 years old, was seriously injured by a fall of the roof while turning a room off the entry. His spinal column was affected.

At the Ledterman mine, Pekin, on Nov. 19, John Lord, 45 years old and a married man, received injuries on his face and neck from a blast in the adjoining room, which broke through the pillar.

At the Grape Creek Co.'s shaft, No. 2, Grape Creek, on Nov. 1, Gus. Jacobs, aged 28, unmarried, had his leg broken by a fall of the roof at the working face.

On January 19, at shaft No. 4 of the same company, Frank Brananan, 24 years old and married, had his leg broken by the roof falling at the face of the room.

At No. 5 of the same company, on November 17, John Perry, aged 50, a single man, was injured in the back by the fall of the roof while tamping a shot.

At the Grape Creek Coal Co. shaft No. 5, on Nov. 18, Westley Sullivan, a cager, aged 45, was injured by a car wheel, which fell down the shaft and glanced off the cage cover, striking him on the back of the shoulder.

On June 25, at Jas. Parker's mine, Pottstown, J. Jones, single, was cut and bruised on the face and back by the falling of the roof in the working room.

November 22, at the Lincoln Coal Mining Co., Lincoln, Edward Donovan, aged 40, married, had his ankle dislocated and was otherwise injured by attempting to get on the cage after it had started down.

At the north shaft of the Petersburg Coal Co., Petersburg, on December 30, Gus. Langreen, 28 years old, and an unmarried man, had his leg broken and was otherwise bruised by falling down the air shaft a distance of 80 feet. He was engaged in cutting the ice out of the shaft at the time, to which he was lowered by a windlass and rope, and the rope broke.

On January 18, at the Glassford mine, Glassford, Thos. Walker, aged 36 and married, had his ankle dislocated by a fall of rock.

On October 10, at the Roanoke Mining Co., Roanoke, James Riley, aged 19, unmarried, had his leg broken by a fall of coal at the face of a working room.

At the McLean Coal Co., Bloomington, December 6, John Rosinsko, 35 years old, married, also had his leg broken by a fall of coal.

At the same place December 13, Peter Johnston, 23 years of age, a single man, was slightly injured by falling rock in the working room.

At the same place December 24, Chas. Guskison, aged 23, unmarried, was injured while securing a bad rock on the entry. A piece of it fell on him striking his back and shoulder.

On the 22d of January, at the north shaft of the Petersburg Coal Co., Petersburg, John Bushing, a single man aged 18, a driver, had his leg broken below the knee, by the colliding of two trips of pit cars.

On January 21, at the Wilkinson mine, Edwards, Andrew Brown, aged 45, a married man, had his leg broken by a fall of rock in his room, which fell while he was in the act of securing it.

At the Athens mine, Athens, June 4, Isaiah Davis, a single man, aged 24, had his arm crushed and broken by a descending cage while bailing out the sump.

At Sholls' mine, Peoria, February 10, George Edwards, unmarried, 21 years old, had his leg broken above the knee by a fall of coal.

At the north shaft, Petersburg, December 19, John Mulholland, aged 32, a single man, had a drill run through his foot by a miner trying to get on the cage after it had started up.

On the 29th of December, at the Bryant mine, Bryant, Howard B. Spenny, a widower, 54 years of age, was caught by a descending cage and seriously injured, some of his ribs being broken and his spinal column affected.

At Sholls' mine, Peoria, February 4, William Hoffman, a single man, 23 years old, was seriously hurt by a fall of rock while loading a car. He and his companion had been warned to timber their room more securely but had neglected to do it.

At Sholls' mine at the same time as the foregoing, James Shirrat, who was working in the room with Wm. Hoffman, was slightly injured by the same fall of rock. He was 22 years old and unmarried.

On April 20 at the Grape Creek Coal Co. Mine No. 4, Theodore Hauk, a married man, aged 36, was hurt on the back and shoulder by a fall of the roof.

On March 25, at mine No. 5 of the same company, Chas. Ross, 35 years old and married, was badly strained by the cage moving away when he had one foot on the cage and the other on the platform.

At the same mine on April 1, J. L. Carrico, 28 years of age and married, was slightly injured on the breast and shoulder by a fall of the roof.

CASS COUNTY—1885.

Name of firm, company or individual oper- ating mine.	Town or post- office nearest the mine.	Capital em- ployed.	CHARACTER OF PLANT.			EMPLOYES.				PRODUCT.										
			Drift, slope or shaft.....	Steam, horse or hand- power	Depth of coal below the surface—feet.	Thickness of coal—feet and inches	Geological No. of seam ..	Long-wall, or pillar and room workings.	No. of places of egress. ...	Ventilation, by fan, fur- nace or otherwise?	Number of miners employ'd	No. of other employes in and about mine.....	No. of days worked during the year	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	Winter	Summer	No. of tons of coal pro- duced .....	Average value of coal per ton at the mine .....
Virginia Coal and Water Co.	Virginia	\$12,000	Shaft.	Steam.	205	3	2	P. R.	1	Nat'l	5	1	75	123	123	.....	.....	.....	320	\$2 00
Cass County Coal Co.	Ashland	13,000	"	"	205	2	6	L. W.	3	"	4	16	223	.....	.....	.....	\$1 12½	\$1 12½	1,905	2 00
Totals.....	.....	\$25,000	.....	.....	.....	.....	.....	.....	4	.....	9	16	293	123	123	.....	\$1 12½	\$1 12½	2,225	\$2 00

* Abandoned December 11, 1884

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.										
		Capital employed.	Shaft.	Drift.	Steam, horse or hand power.	Depth of coal below the surface—feet.	Thickness of coal—feet and inches.	Geological No. of seam.	Long-wall, or pillar and room workings.	No. of places of egress.	Ventilation, by fan, furnace or otherwise?	Number of miners employed.	No. of days worked during the year.	No. of kegs of powder used during the year.	No. men killed during year.	No. of men injured (so as to lose time).	Price per ton paid for mining.	No. of tons of coal produced.	Average value of coal per ton at the mine.	
Emmerson & Skinner Bettell and Chocolate. Jacob Danna. Edward Miles. Robert Roddis. Bryant Coal Co. Henry Floren. Charles Mott. Ed. Miner. Isaac Bath. Taylor Williams, No. 1. " " " No. 2. " " " No. 3. Wyman Coal Co. R. Beecham. G. Williams. Joe McLaughlin. P. P. Chapman. A. H. Head. J. & R. Savil. Ira Tyson. West Canton Coal Co. Mark Whitehead. Wedge Bros. Louis Bell. Isaac Whitehouse.	Astoria	\$30,000	Shaft.	Drift.	Steam.	80	6	5	P-R	3	Fan.	125	205	1,100	—	—	\$0 75	64,740	\$1 12½	
	"	400	"	"	Horse.	60	6	5	"	2	Nat'l	3	160	20	—	—	87½	512	\$1 50	
	Ipava	1,000	"	"	"	60	5-8	5	"	2	"	4	50	10	—	—	75	256	1 62½	
	"	1,200	"	"	Hand.	35	5-7	5	"	2	St'Ve	2	310	42	—	—	75	1,397	1 43¾	
	Bryant	500	"	"	Steam.	40	5-6	5	"	3	Fan.	30	156	511	1	—	85	19,400	1 22½	
	"	20,000	Drift.	"	Steam.	60	2-6	6	"	3	St'Ve	5	150	—	—	—	1 00	880	1 50	
	"	600	Shaft.	"	Hand.	50	2-6	1	"	1	Nat'l	2	130	—	—	—	1 00	600	1 37½	
	Lewistown	400	"	"	"	50	2-6	1	"	1	"	3	60	—	—	—	1 00	200	1 37½	
	"	200	"	"	"	50	2-6	1	"	1	"	1	150	—	—	—	1 00	480	1 50	
	"	500	"	"	Steam.	70	2-6	1	"	3	Fan.	75	184	1,450	—	—	80	36,800	1 25	
	St. David	60,000	Shaft.	"	"	60	5	5	"	3	"	20	100	75	—	—	80	3,138	1 25	
	"	"	"	"	"	112	4-8	6	"	3	"	20	98	130	—	—	80	3,679	1 25	
	Norris	"	"	"	"	75	4-6	5	"	2	Fur.	10	150	110	—	—	85	5,429	1 52½	
	St. David	2,000	Slope	"	Horse.	30	5	5	"	3	"	2	125	—	—	—	87½	768	1 50	
	Norris	2,000	Shaft.	"	"	60	4-6	6	"	2	"	1	90	4	—	—	87½	160	1 25	
	"	50	Drift.	"	Hand.	60	4-6	6	"	2	"	1	90	5	—	—	87½	240	1 25	
	"	40	"	"	"	60	4-6	6	"	2	"	1	90	5	—	—	87½	240	1 25	
	Farmington	"	16,000	Shaft.	"	Steam.	165	4-6	5	"	3	Fan.	12	290	1,025	—	—	75	18,000	1 05
	"	"	20,000	"	"	"	70	4-10	5	"	3	"	29	275	149	—	—	70	13,752	1 27
"	"	6,000	"	"	"	50	4-8	5	"	3	St'm.	6	230	36	—	—	75	3,564	1 35	
"	"	300	"	"	Horse.	80	4-9	5	"	3	Nat'l	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	Steam.	"	Steam.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75	1,015	1 12½	
"	"	7,000	St'm.	"	St'm.	80	4-9	5	"	3	St'm.	9	230	36	—	—	75			

Fulton County—Continued.

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Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.							EMPLOYES.				PRODUCT.				
		Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam ...	Long-wall, or pillar and room workings.....	No. of places of egress ...	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed ^d	No. of other employees in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced .....	Average value of coal per ton at the mine.....
									Winter.....	Summer.....							
Seymour Johnson.....	Canton.....	Drift.....	Hand.....	60	4-6	6	P-R	Nat'l	2	4	183	24	.....	.....	\$0 75	912	\$1 37½
W. H. Jackson.....	"	"	Mule ..	55	4-8	5	"	Fur	2	5	200	200	.....	.....	75	1,011	1 50
L. L. Jones.....	Breeds ..	Drift ..	"	80	4-10	5	"	"	7	4	135	90	.....	.....	75	3,000	1 10
G. W. Hynson No. 1.....	"	Drift ..	"	45	4-6	5	"	"	26	40	220	275	.....	.....	75	5,944	1 37
"	"	"	"	45	4-6	5	"	"	18	26	175	225	.....	.....	75	4,919	1 21½
Pat Meelian (abandoned)	Seville ..	Slope ..	"	50	3	3	"	Nat'l	4	12	130	68	.....	.....	1 00	1,520	1 50
Frank Hubbell.....	Marietta ..	Drift ..	Hand ..	39	6	2	"	"	3	10	165	.....	.....	1 00	1,600	1 75	
Vleet Bros.....	Cuba.....	Shaft ..	Horse ..	80	4-8	5	"	Fur	19	22	312	341	.....	.....	75	2,423	1 20
Cuba Union Coal Co.....	"	Shaft ..	Stream ..	60	4-8	5	"	Fur	35	45	242	400	.....	.....	62½	15,377	1 31¼
Jas. Stirrett.....	"	"	"	40	4-7	5	"	Fur	30	45	200	300	.....	.....	62½	14,825	1 25
Wm. Rutherford No. 1.....	"	Drift ..	Horse ..	20	6	6	"	Nat'l	22	55	155	275	.....	.....	62½	20,000	1 30
No. 2.....	"	"	"	40	4-8	5	"	Fur	15	2	20	20	.....	.....	72½	13,550	1 10
S. H. Bateman, No. 1.....	"	"	"	50	4-8	5	"	"	15	2	20	20	.....	.....	81¼	440	1 25
Churchill & Oran (aban)	Flatt.....	Shaft ..	Stream ..	40	4-6	5	"	S'm	2	6	180	50	.....	.....	75	2,000	1 25
John Bennett.....	"	Slope ..	Mule ..	50	4-6	5	"	Fur	6	14	263	49	.....	.....	62½	2,588	1 25
Carpenter & Lovejoy...	"	Drift ..	"	50	4-6	5	"	"	3	5	180	.....	.....	.....	75	2,000	1 25
E. R. Lance.....	Middle Grove	Drift ..	Hand ..	40	4-6	6	"	Nat'l	3	5	.....	.....	.....	.....	75	1,090	1 25
J. Harnes.....	Cuba.....	Strip ..	"	"	"	"	"	"	3	8	.....	.....	.....	.....	340	340	1 25
John Parker.....	Babylon ..	"	"	50	4-6	5	P-R	Nat'l	3	1	200	24	.....	.....	62½	600	1 00
Hitchens & Wright.....	Cuba.....	Drift ..	Hand ..	"	"	"	"	"	3	1	.....	.....	.....	.....	75	.....	.....
Totals									454	892	7,275	2	7,753	1	\$0 71.8	280,005	\$1 21

MENARD COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.						EMPLOYES.				PRODUCT.					
		Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time)	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
	Capital employed.																

PEORIA COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.								
		Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam.....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd.....	No. of other employees, in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining. Summer..... Winter.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
Joseph Collier.....	Bartonville.....	Drift..	Steam.	87	4-6	5	P.R..	2	Fur..	60	72	228	1,500	.....	.....	\$0 87½	34,820	\$1 37½
W. Treasure.....	Peoria.....	Drift..	Mule.	77½	4-6	5	L.W.	2	Fan..	6	14	200	173	.....	.....	75	4,154½	1 25
John Gorman.....	Peoria.....	Drift..	Steam.	125	4-6	5	P.R..	2	Fan..	60	90	225	1,350	.....	.....	87½	30,000	1 31
Chapman & Little.....	Peoria.....	Shaft.	Mule..	70	4-6	5	P.R..	2	Fur..	25	40	210	1,151	.....	.....	87½	22,550	1 37½
Co-operative Coal Co.....	Peoria.....	Drift..	Steam.	60	4-6	5	P.R..	2	Fan..	23	10	228	202	.....	.....	87½	4,122	1 25
A. Shells Mine.....	Hollis.....	Drift..	Steam.	90	4-6	5	P.R..	2	Fan..	45	60	275	1,400	.....	.....	87½	34,335	1 30
Shells & Tommy.....	Hollis.....	Drift..	Mule..	85	4-6	5	P.R..	2	Fur..	15	25	78	215	.....	.....	75	5,080	1 12½
Newsam Bros. Orchard Mine No. 1	Orchard Mine	Shaft.	Steam.	75	4-6	5	L.W.	1	Fan..	10	5	300	209	.....	.....	75	6,160	1 25
Newsam Bros. Orchard Mine No. 2	Orchard Mine	Shaft.	Steam.	144	2-6	2	L.W.	2	Fan..	12	25	275	250	.....	.....	1 00	6,400	1 25
E. C. Crandall.....	Mapleton.....	Drift..	Hand..	80	4-6	5	P.R..	2	Fur..	2	5	177	64	.....	.....	75	1,600	1 12½
Wasson & M'wers.....	Mapleton.....	Drift..	Mule..	80	4-6	5	P.R..	2	Fur..	6	1	175	90	.....	.....	75	2,100	1 12½
J. J. McVeil & Co.....	Mapleton.....	Slope	Mule..	150	4-6	5	P.R..	2	Nat..	5	30	165	424	.....	.....	75	9,600	1 15
Buckeye Coal & Coke Co	Glassford.....	Slope	Mule..	150	4-6	5	P.R..	2	Nat..	35	50	297	997	.....	.....	75	21,420	1 25
Glassford Coal & Coke Co	Glassford.....	Shaft.	Steam.	129	4-6	6	P.R..	1	Nat..	20	3	170	50	.....	.....	75	1,000	1 25
Glassford Coal Co.....	Glassford.....	Shaft.	Steam.	125	4-6	6	P.R..	1	Nat..	20	3	170	50	.....	.....	75	1,000	1 25
W. A. Glassford.....	Glassford.....	Drift..	Hand..	120	4-6	6	P.R..	1	Fan..	1	2	20	3	.....	.....	75	500	1 25
G. W. Beathard.....	Lancaster L'd.	Drift..	Mule.	120	4-7	5	P.R..	2	Fur..	34	15	160	640	.....	.....	75	80	1 25
D. B. Roberts.....	Orchard Mines	Drift..	Hand..	120	4-6	5	P.R..	2	Nat..	2	1	130	16	.....	.....	75	16,000	1 00
F. Wheeler.....	Orchard Mines	Drift..	Hand..	50	4-6	5	P.R..	2	Fur..	1	4	125	48	.....	.....	75	1,200	1 00
Jas. Reagan.....	Orchard Mines	Drift..	Mule..	50	4-6	5	P.R..	2	Fur..	1	4	120	48	.....	.....	75	1,000	1 00
H. Odyswaldt.....	Orchard Mines	Drift..	Mule..	50	4-6	5	P.R..	2	Nat..	2	1	130	15	.....	.....	75	120	1 00
Powell & Polceen.....	Orchard Mines	Drift..	Mule..	50	4-6	5	P.R..	2	Nat..	2	1	130	15	.....	.....	75	400	1 00
Hanna Coal Co.....	Hanna City.....	Shaft.	Steam.	240	4-4	5	P.R..	1	Nat..	7	30	180	270	.....	.....	75	5,090	1 20
R. P. Downing.....	Smithville.....	Shaft.	Horse.	240	4-4	5	P.R..	1	Nat..	7	30	180	270	.....	.....	75	5,090	1 20
Bogan & Pye.....	Bartonville.....	Slope	Horse.	80	4-6	5	P.R..	1	Fur..	1	4	175	150	.....	.....	75	1,687½	1 25
E. M. Brocket.....	Bartonville.....	Drift..	Mule..	80	4-6	5	P.R..	2	Nat..	3	10	105	73	.....	.....	75	470	1 25

Millard & Woolslang...	Peoria...	5,000	Drift.	Mule	55	4-6	5	P. R.	2	Fur.	65	65	8	250	1,350	...	87½	32,000	1 25
Nicholis Nickles.	Hand..	100	Hand..	Hand..	95	4-6	5	..	2	Nat'l	7	22	1	200	100	...	75	2,200	1 25
L. Smith	Hand..	100	Hand..	Hand..	95	4-6	5	..	2	Nat'l	4	8	1	260	296	...	75	6,500	1 25
Bartonville.	Hand..	500	Hand..	Hand..	95	4-6	5	..	2	Nat'l	15	30	4	275	325	...	75	7,200	1 25
Ed. Wolland.	Hand..	100	Hand..	Hand..	75	4-4	5	..	2	Nat'l	4	15	4	...	...	...	75	4,800	1 25
Fred Fender.	Hand..	100	Hand..	Hand..	125	4-4	5	..	2	Nat'l	5	10	1	144	180	...	75	2,888	1 25
James Pay.	Hand..	100	Hand..	Hand..	180	4-4	5	..	2	Nat'l	10	20	1	300	240	...	75	7,200	1 25
James Monroe.	Hand..	100	Hand..	Hand..	125	4-4	5	..	2	Nat'l	2	4	1	260	100	...	75	1,600	1 25
Ed. Allen.	Hand..	200	Hand..	Hand..	140	4-2	5	..	2	Nat'l	10	14	4	284	640	...	75	10,240	1 25
Edwin Brost Bros.	Hand..	10,000	Hand..	Hand..	125	4-2	5	..	2	Nat'l	21	50	6	357	644	...	75	12,874	1 25
Grant & Wilcox.	Hand..	13,000	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	122	...	75	1,440	1 25
John Burdiss (leased)	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,960	1 00
Kidder es-	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
(ate, Ed. Al-	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
McMasters & Keith,	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
Ion, Agent.	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
Peoria.	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
Deush & Snider,	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
Thomas Orr,	Hand..	200	Hand..	Hand..	125	4-2	5	..	2	Nat'l	2	4	...	300	50	...	75	1,400	1 25
Isaac Royster	Hand..	25	Hand..	Hand..	120	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
James Sloan	Hand..	25	Hand..	Hand..	120	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Walt & Holland.	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
D. Vickery, Nos. 1 and 2	Hand..	200	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Pottstown.	Hand..	300	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Peoria.	Hand..	300	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
*A. H. Barneywaldt.	Hand..	2,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
R. Cody	Hand..	50	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
*F. Moon	Hand..	50	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
*Limestone Coal Co.	Hand..	50	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
John Lauek	Hand..	1,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Kickapoo Coal Co.	Hand..	6,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
James Parker	Hand..	300	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
James Aberley	Hand..	500	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
James Cochran	Hand..	100	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Wantling & Howarth.	Hand..	12,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Burlington Coal Co.	Hand..	12,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Kramm	Hand..	12,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Elmwood Coal Co.	Hand..	50,000	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Edwards.	Hand..	100	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
W. Harper	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
A. Buckley.	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
R. Pillman	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
R. Lonsdale	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
C. Kingsley	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
*John Hicks & Co.	Hand..	600	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Frank Anderson & Co.	Hand..	100	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Sam Linchcott	Hand..	50	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Edwin Filey	Hand..	200	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Pat. Dorin	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
*Jubilee Coal Co.	Hand..	35	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
Sam Maulsley	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
W. E. Colsen.	Hand..	25	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
W. Hindle.	Hand..	30	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25
H. Wynn	Hand..	500	Hand..	Hand..	80	4-2	5	..	2	Nat'l	1	3	...	80	25	...	75	400	1 25

Peoria County—Continued.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.					EMPLOYES.					PRODUCT.				
			Ventilation, by fan, furnace or otherwise?.....	No. of places of egress ...	Long-wall, or pillar and room workings.....	Geological No. of seam ..	Thickness of coal—feet and inches ...	Depth of coal below the surface—feet.....	Steam, horse or hand-power.....	Drift, slope or shaft.....	Number of miners employed	No. of men injured (so as to lose time)	No. men killed during year.....	No. of kegs of powder used during the year	No. of days worked during the year.....	No. of other employees in and about mine	Price per ton paid for mining.	Average value of coal per ton at the mine.....
										Winter.....	Summer.....						
					</												

* Suspended.

† Men paid by the yard or by the day.

TAZEWELL COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.					EMPLOYES.					PRODUCT.						
			Drift, slope or shaft	Steam, horse or hand-power	Depth of coal below the surface—feet	Thickness of coal—feet and inches	Geological No. of seam	Long-wall, or pillar and room workings	No. of places of egress	Ventilation, by fan, furnace or otherwise?	Number of miners employed	No. of other employes in and about mine.	No. of days worked during the year	No. of kegs of powder used during year	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	No. of tons of coal produced	Average value of coal per ton at the mine
										Winter.	Summer.								
Lewis Grant & Sons	Pekin	\$6,000	Shaft.	Steam.	120	4-6	5	P-R	2	Fan.	17	3	109	253	...	...	87½	\$4,819	\$1 50
Joseph Rushia	Hilton	600	Drift.	Mule	98	4-4	5	"	2	Fur.	4	1	152	38	...	...	87½	779	1 62
G. Millard	"	2,000	Shaft.	Horse.	95	4-5	5	"	1	"	4	1	108	45	...	...	87½	972	1 50
G. D. Dissman, Union mines	Pekin	500	"	"	100	4-6	5	"	2	Nat'l	2	6	1 250	90	...	...	87½	1,800	1 37½
Rundle & Goad, Victor mine	"	200	"	"	132	4-6	5	"	7	Fur.	11	3	223	200	...	...	87½	4,639	1 50
J. B. Lederman	"	5,000	"	Steam.	99	4-5	5	"	2	Nat'l	5	1	135	98	...	...	75	2,240	1 37½
N. C. Hawley	"	6,000	"	"	85	4-6	5	"	12	Fur.	25	4	250	550	...	...	82	8,500	1 45
Totals		\$20,300							40		80	14	1,227	1,255	...	...	\$0 84.1	\$23,779	\$1 46

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.							
		Drift, slope or shaft.....	Steam, horse or hand power.....	Thickness of coal—feet and inches.....	Geological No. of seam.....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed.....	No. of other employees in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining. Summer..... Winter.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
Ellsworth Coal Co. 1*	Danville.....	Drift..	Mule.....	45	7	P. R.	2	Fur..	25	5	300	225	1,100	80	\$0 80	26,145	\$1 25
" 2	"	Shaft..	Steam..	74	6	"	3	Fan..	110	23	250	1,000	250	70	70	31,811	1 25
" 3	"	"	"	103	6	"	3	"	90	46	250	400	4	70	80	24,019	1 25
" 4	Grape Creek..	"	Hand..	171	6	"	3	Nat'l	2	3	100	5	30	70	80	450	1 25
J. Dowers	Danville.....	Drift..	Horse..	115	6	"	2	"	3	1	25	18	80	80	300	400	1 30
J. H. Parish.	"	Shaft..	"	40	5	"	2	"	3	1	60	8	80	80	900	1 25	
H. E. Travis.	"	Strip..	"	30	5	"	1	"	1	3	300	60	80	75	800	1 25	
B. F. Hodges.	"	Drift..	Horse..	60	5	"	3	"	8	3	300	5	80	80	2,900	1 25	
J. D. Lloyd	"	"	"	50	5	"	2	"	2	3	475	24	80	80	1,300	1 25	
T. D. Frazier	"	"	"	50	5	"	2	"	6	2	180	25	80	80	375	1 25	
Noah Morgan.	Vandercook..	"	"	50	5	"	1	"	4	6	200	40	75	75	3,000	1 25	
Sullivan & Braceville.	Danville.....	"	"	50	5	"	2	"	5	2	200	20	80	80	2,000	1 25	
Vandercook.	"	"	"	50	5	"	2	"	15	2	200	20	80	80	2,100	1 25	
F. Russell.	Danville.....	"	"	50	5	"	2	"	15	2	200	20	80	80	2,100	1 25	
Albin Jenkins.	"	"	"	50	5	"	2	"	15	2	200	20	80	80	2,100	1 25	
B. Bensil	"	"	"	50	5	"	2	"	15	2	200	20	80	80	2,100	1 25	
W. Ray	"	"	"	50	5	"	2	"	15	2	200	20	80	80	2,100	1 25	
E. Lloyd	"	"	"	50	5	"	2	"	15	2	200	20	80	80	2,100	1 25	
Sam. Swisher.	Blount.....	Shaft..	Horse..	95	6	"	2	Stve	12	1	100	40	75	75	1,500	1 50	
Philip & Tucker.	"	"	"	110	6	"	2	Fur..	4	10	1	200	60	70	2,300	1 25	
Perry Fairchild.	Danville.....	Drift..	Hand..	70	6	"	2	Nat'l	1	1	137	9	80	80	1,000	1 25	
Olof Anderson.	"	"	"	61	6	"	2	Stve	1	10	182	100	60	60	3,000	1 25	
Milton Hodges.	Catin.....	Shaft..	Horse..	130	6	"	2	Fur..	5	2	150	20	70	70	658	1 25	
Thomas.	"	Slope	Nule..	40	6	"	2	Nat'l	1	1	125	15	80	80	375	1 25	
John Thomas.	Oakwood.....	Drift..	Hand..	40	6	"	2	Stve	1	1	125	15	80	80	375	1 25	
W. & J. Woodard Bros.	"	"	"	40	6	"	2	Nat'l	1	1	125	15	80	80	375	1 25	
V. Shook	"	"	"	40	6	"	2	Fur..	1	1	140	20	75	75	1,000	1 40	
W. Woodard, Sr.	Catin.....	"	"	51	6	"	2	"	4	1	100	25	70	80	1,000	1 25	

France Bros.	Fairmount	2,500 3,000	Shaft.	Horse.	103' 6"	6'	7 P-R.	7	7	2 Fur.	22	220	60	80	80	80	3,845 1 50
G. Emmett & W. Davis.	...	...	...	...	98' 6"	6'	7	5	5	...	...	220	40	...	...	...	2,200 1 37½
Grape Creek Coal and Coke Co., No. 1.	Grape Creek.	500,000	Drift.	Mule.	60' 6-8	6'	6	325	250	...	...	265	3,416	1	70	70	150,159 \$1 20
Same Company No. 2.	"	...	Shaft.	Steam.	60' 6-8	6'	6	...	...	...	...	265	...	1	...	...	...
" No. 3.	"	...	Drift.	Mule.	70' 6-6	6'	6	...	...	...	...	265	...	2	...	...	...
" No. 4.	"	...	...	...	126' 6-8	6'	6	...	...	...	...	265	...	4	...	...	...
" No. 5.	"	...	...	...	35' 6-8	6'	6	65	...	2 Fur.	...	265	...	...	...	...	...
M. Kelley.	...	11,000	...	...	60' 6-7	6'	6	20	...	...	...	260	1,400	...	70	70	40,000 1 15
T. L. Spellman.	...	2,000	Drift.	Mule.	120' 6-7	6'	6	8	...	2 Fur.	...	260	30	...	70	70	18,000 1 30
F. A. Tuttle.	...	600	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5,600 1 10
M. Chandler.	Georgetown.	...	Strip	...	...	...	...	...	...	...	...	20	3	...	...	...	500 1 00
C. Lindley.	Danville	...	...	...	...	...	...	...	...	...	...	100	6	...	...	...	500 1 25
George Crawford.	Georgetown.	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	500 1 50
William Kelly.	Danville	...	...	...	...	...	...	...	...	...	...	75	...	...	...	...	1,200 1 50
R. Martin.	Georgetown.	...	...	...	...	...	...	...	...	...	...	100	...	...	...	...	600 1 00
John Coon.	Danville	...	...	...	...	...	...	...	...	...	...	60	...	...	...	...	150 1 25
W. Childs.	...	...	...	...	...	...	...	...	...	...	...	100	...	...	...	...	600 1 00
Nick Ingram.	Vandercreek.	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	500 1 00
E. Miller.	...	...	...	...	...	...	...	...	...	...	...	50	...	...	...	...	80 1 25
W. J. Riley.	Danville	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	200 1 25
A. S. Williams.	...	...	...	...	...	...	...	...	...	...	...	40	...	...	...	...	5,000 1 25
A. Wilson.	Vandercreek.	...	...	...	70' 6"	6'	7 P-R.	2	...	1 Nat.	...	75	50	...	...	...	200 1 25
Joseph McBroom.	Oakwood	25	Drift.	Hand.	...	...	...	...	...	...	...	80	2	...	...	...	1,200 1 00
Henry Bull.	...	...	Strip.	...	...	...	...	...	...	...	...	60	...	...	...	...	200 1 00
Theo. Brooks.	Grape Creek.	40	Drift.	Hand.	100' 6-8	6'	6 P-R.	2	4	2 Nat.	...	180	20	...	80	80	800 1 25
Totals.	...	\$1,043,735	...	...	...	...	...	671	861	318	...	8,334	8,551	2	7	\$0 70.3 \$0 74.5	423,869 \$1 22

* Ellsworth Coal Co. No. 1, mine tonnage includes coal from two strippings also.

† Sus-pended.

‡ Abandoned.

§ The cover on the coal in these strippings will run from 3 to 25 feet, when it is the latter thickness the greater proportion of it is sand with 3 to 6 feet of sandstone immediately above the coal.

|| At these strippings laborers are paid \$1.25 a day.

RECAPITULATION BY COUNTIES—THIRD DISTRICT.

Counties.	Capital em- ployed.	Acreage.	No. of mines.	No. of mines shipping coal.	No. of mines, local.	Kinds of power employed	Kinds of openings.	Modes of working coal.	No. of miners and other employees.	Average No. of days worked.		No. of kegs of powder used.	No. of men killed.	No. of men injured so as to lose time.	Average price per ton paid for mining.		No. of tons of coal produced.	Average price of coal per ton at the mines.	No. of mines with escapement shaft.	No. of mines without escape- ment shaft.	Kinds of power used for venti- lation	Natural.			
										Hand	Horse				Steam.	Winter.							Summer.		
Cass	\$25,000	568	2	2	2	16	19	2	2	2	1	2	2	9	16	4	\$2,225	\$2.00	1	1	1	7	15	3	22
Fulton	218,555	3,460	47	23	23	3	3	3	3	3	3	3	3	3	3	3	940,075	1.21	36	9	9	3	3	3	22
Logan	172,000	1,940	3	3	3	1	1	1	1	1	1	1	1	1	1	1	172,000	1.31	1	2	1	1	1	1	2
McLean	103,000	320	1	1	1	1	1	1	1	1	1	1	1	1	1	1	135,000	1.25	1	1	1	1	1	1	1
Menard	58,800	905	7	5	2	2	2	2	2	2	2	2	2	2	2	2	138,120	1.18	7	1	1	1	1	1	1
Peoria	231,475	9,881	85	23	62	34	37	63	22	24	1	237	204	6	80	6	515,675	1.23	56	31	4	31	4	31	49
Tazewell	20,300	800	7	2	5	3	4	6	1	14	175	163	1	1	87	9	23,780	1.46	6	1	1	1	1	1	1
Vermilion	1,043,785	5,381	44	6	44	25	25	38	17	38	160	8,551	9	9	70	3	423,860	1.22	47	8	5	17	5	17	33
Woodford	77,000	2,200	2	2	2	2	2	2	2	25	230	58	1	1	80	8	319,740	1.49	2	1	2	2	2	2	2
Totals	\$1,946,915	23,545	209	71	138	50	81	50	151	58	2,619	4,234	979	25	80	75	1,811,405	\$1.25	157	52	24	73	4	108	168

† Fulton county has 2 strippings.

* Vermilion county has 16 strippings.

FOURTH DISTRICT.

EMBRACING BOND, CHRISTIAN, COLES, EDGAR, GREENE,
JASPER, JERSEY, MACON, MACOUPIN, MADISON,
MORGAN, MONTGOMERY, SANGAMON,
SCOTT, SHELBY, AND CAL-
HOUN COUNTIES.

WALTON RUTLEDGE, ALTON, *Inspector.*

Mr. JOHN S. LORD,

Secretary of the Bureau of Labor Statistics of Illinois:

SIR: In compliance with section twelve (12) of an act providing for the health and safety of persons employed in coal mines, in force July 1, 1883, I herewith submit my second annual report of the Fourth Inspection District, for the year ending June 30, 1885.

A series of tables is given showing the amount of capital employed, the number of acres of workable coal controlled by the various operators, the kinds of openings and power used at the different mines for raising coal, the number of tons of coal produced, with an average value of the same at the mine, the number of miners and other employes in and around the mines, with the price per ton paid for mining at the different mines, and in the different counties; also showing the kinds of power used in ventilation, and the different modes of working the coal.

Short sketches of the mines shipping coal are given, showing improvements made during the year, and other details of interest.

The number of fatal accidents for the year ending June 30, 1885, was 13, and the number of non-fatal accidents 36.

The total amount of coal mined in the district during the year, was 2,615,992 tons.

The number of tons mined for each life lost was 201,230.

The number of tons mined for each non-fatal accident, yet serious enough to occasion loss of time, was 72,666.

The number of employes for each life lost was 381.

The number of employes for each non-fatal accident was 138.

There are in the district 104 mines, in 16 counties: 28 in Madison, 22 in Macoupin, 15 in Sangamon, 9 in Greene, 7 in Shelby, 6 in Scott, 5 in Jersey, 2 in Macon, 2 in Morgan, 2 in Bond, 1 in Christian, 1 in Coles, 1 in Jasper, 1 in Montgomery, 1 in Edgar, and 1 in Calhoun. There has been a considerable falling off in the output during the year in Macoupin and Sangamon counties, owing to strikes in both counties.

Among the improvements effected in the district during the year has been the construction of 10 new fans, and the completion of 3 escapement shafts, and 5 more are being sunk; and connection is made for an escapement between the old Riverton shaft and No. 3 colliery of the Sangamon County Coal Co.

All the new mines being opened, and some of the old ones, are adopting the system of double entry working, and of splitting the air into separate currents.

Respectfully submitted.

WALTON RUTLEDGE,
Inspector 4th District.

NEW FANS.

List of ventilating fans put up during the year:

Collinsville Coal and Mining Co., Collinsville, Madison county, a Brazil fan 10 feet in diameter.

Girard Coal and Mining Co., Girard, Macoupin county, a Brazil fan 12 feet in diameter.

West End Coal Co., Springfield, Sangamon county, a Brazil fan 12 feet in diameter.

Wolf Bros. Coal Co., Edwardsville, Madison county, a Brazil fan 10 feet in diameter.

Canteen Coal Co., Collinsville, Madison county, a St. Louis fan (Ellison's) 10 feet in diameter.

Apple Creek Coal Co., Franklin, Morgan county, a Brazil fan 8 feet in diameter.

Capital Co-operative Coal Co., Springfield, Sangamon county, a Brazil fan 12 feet in diameter.

Riverton Coal Co., Riverton, Sangamon county, a Brazil fan 12 feet in diameter.

Pana Coal Co., Pana, Christian county, a Decatur fan (built by Novelty Iron Works) 12 feet in diameter.

Heintz Bluff Mines, Collinsville, Madison county, a Brazil fan 10 feet in diameter.

NEW ESCAPEMENT SHAFTS.

List of mines at which escapement shafts have been sunk and are being sunk during the year 1885.

Niantic Coal Co., Niantic, Macon county, escapement shaft finished.

Illiana Coal Co., Illiana, Edgar county, escapement shaft finished.

F. Shermach's mine, Edwardsville, Madison county, escapement shaft finished.

Ellsworth Coal Co., Worden, Madison county, shaft No. 12, escapement shaft being sunk.

Decatur Coal Co., Decatur, Macon county, escapement shaft being sunk.

Mattoon Coal Co., Mattoon, Coles county, escapement shaft being sunk.

Apple Creek Coal Co., Franklin, Morgan county, escapement shaft being sunk.

Farmers Coal Co., Neelyville, Morgan county, escapement shaft being sunk.

Sangamon Coal Co., Riverton, Sangamon county, No. 3 colliery, connected with Riverton shaft for escapement.

CASUALTIES IN MINES.

List of fatal accident which have occurred during the year.

BROOKSIDE COAL CO.

John Hall, a single man, was killed by falling slate in this mine July 23, 1884. He was working with his brother in the face of a room. They were loading two coal cars at a time, and to get to the outer car with coal, props had been left out, and there being a slip in the slate at the face of the room, it fell without warning, and caught him on the back.

DECATUR COAL CO.

Patrick Burns, a married man, was killed by falling coal, August 8, 1884, in the Decatur shaft. As the coal fell it knocked out a prop, which struck him in the breast; he lived about half an hour. He left 5 children, his wife being dead.

ELLSWORTH COAL CO.

Henry Schutte, a married man, was killed in No. 8 shaft, September 27, 1884, by falling coal. He was undermining a standing shot, when the coal fell and caught him. He left a wife and 2 children.

MCDONALD COAL CO.

Samuel Noble, a married man, was killed in the McDonald shaft, by falling slate. He was 25 years old and left a wife and 2 children. He had fired a shot, the powder of which had damaged the roof slate; he went to load his coal not noticing the slate, which fell and struck him on the back of his head. The accident occurred November 29, 1885.

ELLSWORTH COAL CO.

Barnhardt Miller, a boy, fell down No. 6 shaft, November 29, 1885. He was not working at the time. His father was employed to coal the locomotives at night, and to take coal out of the shaft for that purpose. The boy's mother had called the boy out of bed to assist the father. At the top landing there were gates which had to be taken off to hoist water out of the shaft, and a bar to be put in, in place of the gate. The father had forgot to put up the bar and the boy pushed a coal car into the shaft and went in with it and fell to the bottom.

ELLSWORTH COAL CO.

Joseph Brustrung, aged 30, a single man, was killed November 30, 1884, by slate falling from a slip in the left side of the room in No. 10 shaft. The room was very well timbered. He did not notice the slip in the slate.

CAPITAL CO-OPERATIVE COAL CO.

Wm. Daughton, a married man, was killed February 16, 1885, by a boiler explosion. The fireman had discovered the water to be low in the boiler and Daughton and the fireman were in the act of drawing the fire when the boiler exploded. He left a wife and 6 children.

ELLSWORTH COAL CO.

John Schneider, a single man, was killed in No. 7 shaft. He was undermining a standing shot; his partner working with him requested him not to do it, but he answered that he was an old miner and understood what he was doing. His partner left the room where they were working, and a few minutes after learned that Schneider was killed. The accident occurred February 20, 1885.

SORRENTO COAL CO.

James Ango, aged 47, was killed January 25, 1885, by falling coal. He was shoveling out the undermining, when the top coal fell and struck him. He left a wife and 2 children.

CAPITAL CO-OPERATIVE COAL CO.

Patrick Gaughan, aged 55 years, was killed by a premature blast. He had lighted his shot, and did not get far enough out of the way. The coal struck him and killed him. The accident occurred December 27, 1884. He left 8 children.

ELLSWORTH COAL CO.

Otto Loecher, drowned in the sump at No. 8 shaft December 31, 1884. It was not known how he got into the sump; there was a passage way around the shaft; the landing planks on the sump

were 15 inches apart, and there were two cagers at the bottom of the shaft, but they did not see him fall in. He was 19 years old.

ELLSWORTH COAL CO.

Jurgen DeWerff, aged 54 years, was killed by a fall of top coal in No. 10 shaft. He was taking down a standing shot and there was a quantity of coal under his feet which caused him to trip, when the coal fell on him. He left a wife and 6 children. The accident occurred January 1, 1885.

GIRARD COAL CO.

Samuel Coop, aged 50, was killed in the face of his room at Girard coal shaft June, 20, 1885, by falling slate. He left a wife and 3 children. The accident occurred the first thing in the morning. His partner, working with him, cautioned him about the slate being bad, and he tried to take the slate down but failed. He commenced to load coal under it when it fell. He lived two hours after being taken out of the shaft.

NON-FATAL ACCIDENTS.

GIRARD COAL CO.

Fred Sieberts was injured by falling coal October 2, 1884. He was off work 26 weeks.

Albert Macher was injured by falling coal October 31, 1884. He was off work 12 weeks.

Albert Macher was again injured by falling coal February 10, 1885. He was off work 8 weeks.

John Carey was injured by falling slate March 1, 1885. He was off work 7 weeks.

APPLE CREEK COAL CO.

Michael White was injured by falling slate May, 1885. He was off work 6 weeks.

WINCHESTER SHAFT.

John Brady had his leg broken by falling coal.

MCDONALD COAL CO.

John Roberts was injured January, 1884, by an explosion of powder. He had put in a charge of loose powder, which exploded while he was tamping it, burning him on the face and hands. He was laid up for 4 weeks.

ANCHOR COAL CO.

Michael Dillon, aged 28, a single man, was severely injured November 22, 1834, by falling slate. Both hips were dislocated and otherwise bruised. The roof of the place where John Dunn and himself were working was very fragile. The place seemed to be well timbered, but slate fell between the timbers. These men were both good miners. Dillon has not been able to work since.

John Dunn was only slightly injured. He lost 4 days' work.

GILLESPIE COAL CO.

Wm. T. Knaggs was injured by falling into the dump. His back was sprained and shoulder bruised. He lost 2 weeks' work.

CAPITAL CO-OPERATIVE COAL CO.

Thos. Landrigan was injured February 16, 1885, by the boiler explosion. He was bruised and scalded, and was sick for about 2 months.

ELLSWORTH COAL CO.

August Deppe was injured January 5, 1885. His right leg was broken above the ankle, both bones and thigh bone were broken in his left leg, by falling slate. The accident was the result of his own carelessness.

MATTOON COAL AND MINING CO.

Henry Logan was injured December 22, 1884. He had his arm hurt by a fall of slate, caused by carelessness in timbering.

J. Kavanah was injured January 30, 1885. He had his ankle hurt and one small bone broken by the fall of a piece of slate.

M. Turner was injured May 11, 1885. He had two ribs fractured at the spinal column and was internally bruised by a fall of slate, caused through his own gross neglect of timbering and brushing.

PANA COAL AND MINING CO.

Louis DeNemore, a single man, was injured by being crushed between two mine cars. He was off work 2 months.

Charles McKillop, a single man, had his leg broken by a fall of slate. He was off work 4 months.

TROY COAL CO.

Wm. Turner, shoveler from the machine, was injured March 5, 1885, by a fall of coal. He was hurt and bruised about the hips. He lost 4 weeks' work.

DECATUR COAL CO.

August Hanna was injured September 10, 1884, by a fall of coal. He had his foot bruised so that he lost 4 weeks' time.

George Jones, aged 19, was injured September 14, 1884. He had pushed a car too close to the cage; when the cage started the car tilted, striking him in the neck. He was off work 10 weeks.

John Campton, aged 38, was injured July 29, 1884, by a fall of coal, which struck him on the leg. He was off work 8 weeks.

Edward Bevins, 16 years old, a trapper boy, was injured by a coal car pushing him against the door post. He lost 4 weeks' time.

John Wallet, Sr., aged 60, was injured January 17, 1885, by a fall of slate. He was injured in the back, and was sick 7 weeks.

Fred Creovisky, aged 20, was injured February 5, 1885. He was cut in the forehead by a prop knocked out by falling coal. He lost 4 weeks' time.

Charles Keppler, aged 28, was injured February 26, 1885. His foot was bruised by falling coal, and he lost 2 weeks' time.

Wm. Hughes, aged 55, was injured April 1, 1885. His leg was broken by falling coal, and he is still off work.

CHESTERFIELD COAL AND MINING CO.

Arthur Wright, aged 20, was injured February 10, 1885, by a fall of coal. His knee-cap was split, and he was 4 weeks off work.

SPRINGFIELD CO-OPERATIVE COAL CO.

David McDonald, aged 23, had his leg broken September 20, 1884, by a fall of coal.

DORSEY COAL CO.

Simon Woods, aged 21, was injured January, 1885, by a fall of top coal. He was off work 3 weeks.

BROOKSIDE COAL CO.

Louis Heck, aged 37, was injured April 1, 1885, by a fall of slate. He died June 6, 1885. The doctors stated that his general health was very poor, and that he had a disease in the lungs, or he would have recovered from the accident. He left a wife and five children.

ABBEY COAL AND MINING CO.

August Fuhrman was injured by a fall of coal January 3, 1885. He had his foot bruised and lost 4 weeks' work.

David Wilson, trapper boy, was injured February 2, 1885, by being caught between two coal cars.

John Wilson was injured February 18, 1885, by falling coal. His left shoulder was bruised. He lost 2 weeks' work.

David Killinger was injured February 21, 1885. He had his arm caught in the cog wheel of the slack elevator.

John Babbs was injured April 8, 1885, by falling clod. His right foot was bruised. He lost 5 weeks' work.

Samuel Moore, a colored man, was injured May 30, 1885. He had his fingers crushed by coupling coal cars. He was the car piler, and undertook to couple the cars after they were loaded.

HEINTZ BLUFF MINE.

Jos. Kotalik was injured by a fall of coal striking him on the knee. He lost two weeks' work.

STRIKES.

There have been two strikes in the 4th district during the year, one in the Springfield district which was not of long duration, and the other in the Staunton district in Macoupin county. This strike began at Mount Olive, March 1, 1885, on account of a proposed reduction of $33\frac{1}{3}$ per cent. in the price of mining and extended to nearly all the mines on the line of the Wabash, St. Louis and Pacific railroad. Notices of the reduction were posted at the shafts at Mount Olive on the morning of the 27th February, 1885. The price being paid up to March 1, was 60c per ton, the notices stated the price from the 1st of March would be 40c per ton. On Sunday March 1, the miners of the Ellsworth Coal Co. met at Harmony Hall in Mount Olive and selected a committee of three miners to wait on E. R. Fisher, the superintendent, offering to resume work at last summer's price, viz: 50c per ton. The committee reported to a mass meeting of the miners, called for 10 o'clock the next day, the rejection of the miner's offer by the company. The miners then sent a committee to Staunton to notify the miners of that place that they desired to meet them for the purpose of considering what steps should be taken in the matter, and whether the company were justifiable in making such a wholesale reduction. The contract of the Staunton miners had yet three months to run until the first of June. After consultation the Staunton miners agreed to stop work, and assist the Mount Olive miners in maintaining their price for mining. The Staunton miners could very well see that if the Mount Olive men agreed to a reduction, the price at Staunton would be the same after the expiration of their contract. They accordingly determined to make common cause with the Mount Olive men, and justified themselves in this violation of their unexpired contract, in consideration of the fact that the company had already forfeited their rights under that contract by the introduction of wider screens than those contemplated by the agreement. One very objectional clause in the notice put up by the operators at Mount Olive was that the miners would be required to mine 100 lbs of clean coal for a bushel, the coal at Mount Olive having previously been all weighed gross. Up to this time there had been no miners union or association existing at Staunton or Mount Olive, but it was resolved at

a mass meeting held by the miners of both places to connect themselves with the Miners Benevolent and Protective Association of the State of Illinois.

After being organized by the proper officers of the association, delegates were sent from time to time to Gillespie, Belleville and Collinsville districts informing the miners of those districts of the movement and requesting them to co-operate with the miners in the Staunton district. Those delegates did not meet with much success, except at Gillespie, where both of the Gillespie shafts agreed to stop and support the Staunton and Mount Olive miners in maintaining their price for mining. The delegates reported demoralization and almost destitution among the miners in the Belleville district.

On March 16, 1885, the miners joint executive committee sent two delegates to Danville to try to stop all coal which might be shipped to fill the Staunton and Mount Olive contracts from that place; but on the arrival of the delegates in Danville, they found that the miners in the employ of the Ellsworth company at Danville were already on a strike to have a reduction of $12\frac{1}{2}$ per cent. which occurred about six months previous, restored and also to try to abolish the truck store which the company had established, and which seemed more objectionable to the miners than the $12\frac{1}{2}$ per cent. reduction. The miners at Danville stated they were in sympathy with Staunton miners, and would make their cause common, in order to secure a fair price for their labor.

On the 23th of April the miners of Mount Olive and Staunton formed themselves into a delegation of about 500 men, which was again divided into companies, each with its captain, marshall, etc., and took a line of march to Edwardsville, Collinsville and St. Clair county, to make an effort to get the miners in Madison and St. Clair counties to stop work until a uniform price of mining could be established in all three counties, viz: Macoupin, Madison and St. Clair. On the 1st of May another delegation of 200 miners visited the Collinsville and Belleville districts and remained about two weeks, trying to keep the miners of those districts from working. While they remained they were successful, but when they returned home the men all through Belleville and Collinsville districts, began to go back to work again, first one shaft and then the other; each blaming the other for the break. The Staunton men saw that the strike in the Belleville and Collinsville districts was a failure. Many subsequent efforts were made by Macoupin county and some Belleville miners, to unite the Staunton and Belleville miners in a common cause, but their efforts were futile.

The object of the Staunton miners in effecting an organization with Belleville, was to secure the formation of a coal exchange among the operators tributary to the St. Louis market, so as to have a minimum price for selling coal established, justifying the paying of a uniform price of 60 cents per ton for mining coal in seam No. 6, in Macoupin, Madison and St. Clair counties. At one time this object was almost accomplished, but owing to some small difficulties between the machine and hand operators, owing to the resolutions drawn up between the operators and miners committee,

at a meeting held in East St. Louis, on Saturday, May 10, 1885, and ratified by two meetings of operators a few days afterwards (May 17 and 19), it was not carried into effect.

Up to this time the Ellsworth company made no conciliatory advances, always refusing to recognize any committee of miners. As one particular illustration: in the early part of the strike, A. C. Daniels, general manager, endeavored to call a mass meeting of the miners at Staunton, but it was a failure. The miners collected in the park and sent their committee to him, but he refused to deal with them through a committee.

About May 21, a notice was posted at Mount Olive, and one at Staunton, that the price fixed upon at the operators' meeting Monday, May 19, for selling coal in the St. Louis market, would justify the company in paying 50 cents per ton for mining, although the object in fixing a price, if any had been fixed upon, was to justify each operator in paying 60 cents per ton for mining. The miners of Mount Olive and Staunton immediately posted notices alongside of those of the company, to the effect that the price demanded by the miners of the Ellsworth company was 60 cents per ton, a $\frac{1}{2}$ -inch screen, and a check weighman. Mr. Fisher, superintendent of the Mount Olive mines, took the notices put up by the miners at Mount Olive, and forwarded them to A. C. Daniels, general manager.

On Monday, May 26, 1885, Mr. Daniels and Mr. Charles Ridgely, president of the Ellsworth company, came to Staunton and held a meeting with the joint committee of the miners, where it was charged by the president that there was only about 30 men standing between the miners and the company's last offer, viz, 50 cents per ton, and they (the company) were satisfied if they could have an opportunity of speaking with the body of men, that the offer would be accepted. Therefore the officers of the miners' executive committee called a mass meeting of the miners of Staunton, Worden and Mount Olive, to meet the representatives of the company at Staunton, on May 27, 1885, to verify this charge or contradict it. At this meeting, which was well attended by the miners, Mr. Ridgely did all in his power to impress upon the miners the impossibility of the company paying any more than 50 cents per ton; still the miners refused to accept the terms offered by the company.

After this meeting, however, the members of the executive committee began to consult with one another, and with some of the more intelligent of the miners, upon the advisability of continuing the strike any longer. Knowing that the formation of a coal exchange in the St. Louis district was a failure, and failing to secure a suspension of work by the miners of St. Clair and Madison counties, and after a consultation with the leading citizens of Macoupin and Belleville districts, the executive committee, in behalf of the miners, consulted J. D. Crabb, superintendent of Ellsworth Coal Co., at Staunton, to learn if Mr. Ridgely's terms were still open, and was informed that they were. The committee then informed him that as soon as the Danville miners' grievances were satisfactorily settled, the miners of Mount Olive and Staunton were ready to accept the terms offered by Mr. Ridgely.

This action of the committee did not meet with the approval of more than one-half of the miners at first, but gained a large majority as the propriety of the action became more apparent. Some, however, held out stubbornly to the last.

The grievances of the Danville miners were not so easily settled, however, as was at first expected, the miners on the one side asking 75 cents per ton and the abolishment of the truck store, and Mr. Daniels on the other side resisting the claims of the miners. Thus a week elapsed without any particular change in affairs at either Mount Olive, Staunton or Danville. At this time the Miners' Benevolent and Protective Association was in session at Springfield, and the convention, by its members, recommended that the Mount Olive and Staunton miners accept the terms of the Ellsworth company, and give to the striking miners at Gillespie and Danville one-third of their wages, and that Danville make as favorable a settlement as possible.

The Danville miners' executive committee met, after this action of the State convention, and tendered the following resolution to the miners of Mount Olive and Staunton, "*Resolved*, that we leave to your option the settlement of your strike, and should you see fit to resume work that you be earnestly requested to financially aid us for we intend to hold out." At the beginning of the strike it was understood that the miners of Vermilion county and Macoupin county, should stand by one another, until both had gained their terms, but later developments showed to the miners of Macoupin county that to abide by that understanding would be suicidal to their own organization.

The action of the State convention together with the resolutions of the Danville miners and some correspondence from the Belleville district, recommending the acceptance of the terms offered, was submitted to a mass meeting on June 7, 1885, when it was decided to resume work on Tuesday, June 10, 1885, which was afterwards changed to Monday, June 9, 1885, the miners to have the privilege of running a check for a check weighman. The agreement is 50 cents per ton for mining, and a $\frac{7}{8}$ inch screen, except at Mount Olive, where the screens have not been changed yet, but Mr. Fisher promises to change them as soon as possible. Last winter the price of mining coal was 60 cents per ton, giving 100 pounds to the bushel, with no check weighman. Powder \$2.75 per keg, oil 70 cents per gallon, smithing 1 cent per ton, nut coal sold to miners 2 cents per hundred pounds, and lump coal 6 cents per 100 pounds.

The present contract at Mount Olive is 50 cents per ton for mining and 92 pounds to the bushel, until the screens can be repaired, when an average will be taken, by weighing the coal after it has passed over a $\frac{7}{8}$ inch screen. Powder \$2, oil 70 cents, nut coal 2 cents per 100 pounds, lump 6 cents per 100 pounds. The Staunton contract is 50 cents per ton over $\frac{7}{8}$ inch screen, the coal to be weighed on track. Powder, oil and coal the same as at Mount Olive, with a check weighman at each shaft.

The operators at Gillespie, the Gillespie Coal Co. and the Dorsey Coal Co., have as yet made no agreement with their miners. The miners are ready to go to work on the same terms as those at

The cost of casing and fan house will vary according to circumstances. The following kinds and quantities of lumber will build the casing, and the fan and engine house, where the engine is geared direct, for fans of the following dimensions:

For 15-foot fan:

1,800 feet matched flooring; 36 pieces 2x4—16; 5 pieces 6x8—14; 6 pieces 2x6—16; 1 piece 21x22—14. The roof will require four squares.

For 12-foot fan:

1,500 feet flooring; 36 pieces 2x4—12; 4 pieces 6x8—16; 4 pieces 2x6—14; 1 piece 8x18—14; roof 3 squares.

For 10-foot fan:

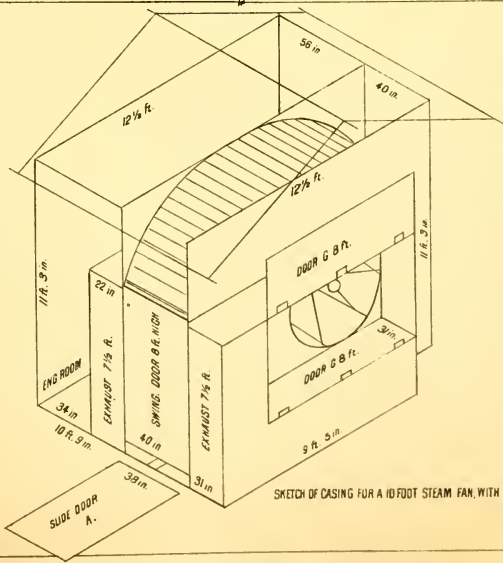
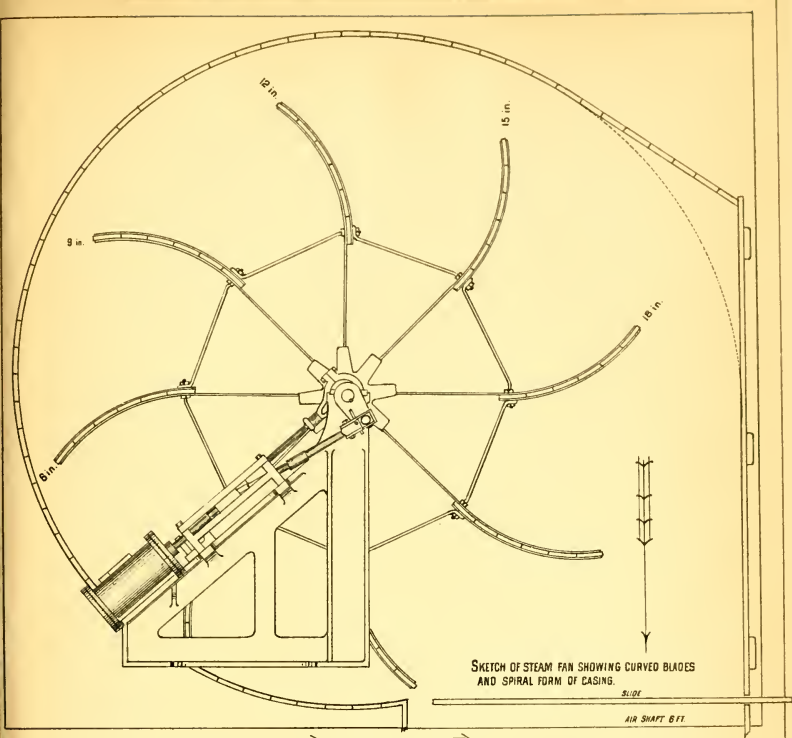
1,100 feet flooring; 36 pieces 2x4—12; 4 pieces 6x8—12; 4 pieces 2x6—12; 1 piece 8x14—10; roof 2 squares.

For 8-foot fan:

900 feet flooring; 36 pieces 2x4—10; 4 pieces 4x6—10; 1 piece 8x12—10; roof 1½ squares.

For 7-foot fan:

800 feet flooring; 35 pieces 2x4—10; 4 pieces 4x6—10; 1 piece 8x12—10; roof 1½ squares.



Staunton and Mount Olive, but the operators refuse, stating they will pay no more than 40 cents per ton, or the same price that is paid in the Belleville district for hand mining. The price for hand mining in the Belleville district is not over 40 cents per ton, or about equal to machine mining. Forty cents per ton for hand mining is entirely too low, as miners cannot support themselves and their families as they ought to. There is only one way of raising the price of mining in St. Clair and Madison counties, and that is for the operators to form a coal exchange and fix a price in East St. Louis, so as to pay a living price for mining. There are 64 mines shipping coal into the city of St. Louis, 14 of which are machine mines. At the present depressed condition of trade in and around St. Louis, the machine mines can furnish all the coal that is required. Competition is so great, that coal is selling in East St. Louis as low as \$1.12½ per ton. Consequently in hand mines the miners are working for low wages, and after the freight is paid, there is a very small margin for the operator. During the late strike in Macoupin, Madison, and St. Clair counties, to the credit of the miners be it said, everything passed over peaceably and quietly, the law being respected. The executive committee of the miners had the miners well in charge and saw that no breach of the law was committed.

COLLIERIES IN MACOUPIN COUNTY.

ELLSWORTH COAL COMPANY, No. 5 COLLIERY, STAUNTON.

There have been some improvements made here during the year. Two extra boilers have been put in with an improved heater. A brick smoke stack has been built, a large reservoir has been constructed to collect surface water for boiler feed, and general improvements were made during the miners' strike. The underground workings are in good shape. Ventilation is good. A friction gearing has been erected connecting with the engine that runs the revolving screens for drawing the cars along the branches to the screens, doing away with mule power. The tail rope, or endless rope, could be economically used in this mine, as the working faces are a considerable distance from the shaft. The entries are all driven double to secure good ventilation and the better working of the coal, and every possible opportunity is taken to split the air. This mine is very successfully managed, and in the amount of output is the second mine in the district.

J. D. Crabb, Superintendent.

W. R. Morris, Mine Manager.

No. 6 COLLIERY AT STAUNTON.

This is the banner colliery of the Ellsworth Coal Co., but owing to the strike in the Staunton district the output fell considerably short this year. The mine is well ventilated by a six foot Murphy fan, having a split for each set of entries. Overcasts are put in for

each set of entries, carrying the return air over the intake air. The manager has introduced water gauges on the two main splits at the bottom of the downcast to give the drag of the air in the mine. Everything above and below shows good management.

J. D. Crabb, Superintendent.

J. P. Hebenstreit, Mine Manager.

No. 7 COLLIERY AT STAUNTON.

This shaft has not done much during the year owing to a crush in the mine. The crush closed both the hoisting and escapement shafts. The west side has been opened up and work begun by hand mining, the shaft being originally a machine mine.

J. D. Crabb, Superintendent.

John Reese, Mine Manager.

No. 8 COLLIERY AT MT. OLIVE.

A number of improvements have been made at this colliery during the year. A pair of double engines 18x32 have been put in to hoist the coal, a brick smoke stack built, a brick engine room 26x28 and brick boiler house 38x45 have been built, and two new boilers have been put in. The underground works are laid out with a view to a large output of coal as soon as connections can be made with No. 9 shaft for escapement. There are yet 750 feet to drive, which would have been finished but for the three months' strike. Overcasts will be put in and the air split for each set of entries. The mine is at present ventilated by a steam jet.

F. R. Fisher, Superintendent.

Jas. Morris, Mine Manager.

Nos. 9 AND 10 AT MT. OLIVE.

These mines worked very steadily up to March 1, 1885, when the yearly contract of the miners expired. The mines were stopped until the 8th of June, 1885. The underground works have all been remodeled from single to double entry and the hauling tracks have been reconstructed. A considerable length of double track has been extended in main and lateral entries. The underground works are in very good shape for a rapid movement of coal. The furnace is still used for the ventilation of the mines, but it is the intention of the company, when Nos. 8 and 9 are connected with each other underground, to put in a large fan to ventilate all three of the shafts, Nos. 8, 9 and 10. The fan is to be located at No. 9, or the middle shaft as they now stand.

F. R. Fisher, Superintendent.

Wm. D. Golden, Mine Manager.

ANCHOR COAL CO., MT. OLIVE.

This shaft has only worked about half the time during the year. The escapement shaft has been finished and ladders put in from bottom to top. There is an extensive plant here for mining coal by machinery. The coal cutting machines have not been used during the year; all mining has been done by hand. The colliery is now stopped for want of orders for coal; the shaft stopped with the strike in the Staunton district, and will not start up until fall.

Wm. Giles, Superintendent.

GIRARD COAL AND MINING CO.

This shaft has been worked very successfully during the year. It has been supplying the C. & A. road with all the coal they use south of Lincoln. Ladders have been put in the escapement shaft during the year; all new entries opened up double. The ventilation has been increased by splitting the air currents, and a twelve-foot fan is used for ventilation, giving 30,000 cubic feet of air in three splits.

H. Wood, General Manager.

A. K. Young, Superintendent.

Jas. McGrainor, Mine Manager.

NILWOOD MINE.

This shaft is operated by Dennis Noonan, on a lease from the owners. The works have been opened up on the double entry system during the year. There are on an average 50 miners working at the shaft. Most of the coal mined here is shipped to Alton. This mine has been troubled some during the year with gob fires, but they are now successfully put out.

Louis Kortkamp, Manager.

CARLINVILLE COAL CO.

Collieries Nos. 1 and 2 of this company have been stopped since November, 1883, owing to the fact that they have no escapement shafts. An escapement will be sunk this fall to connect with No. 1, when mining will again be commenced.

Wm. Farrell, Manager.

ST. BARNARD COAL AND MINING CO.

This is the Yock mine at Clyde, Hornsby P. O., and will be now known as the St. Barnard Coal and Mining Co. It is a machine mine, operating on an average six Yock coal cutting machines. A Duplex Yock compressor is used to supply air to the coal cutting machines. This shaft has a very bad roof, but is worked very successfully with the machines.

Benjamin Yock, Manager.

BUNKER HILL COAL CO.

This mine has been worked very successfully during the year, and some improvements have been made. All new entries are to be opened up double. The ventilation is good, executed by a ten-foot fan, which is run by wire rope gearing. The power is transmitted from an engine at the hoisting shaft, 600 feet from the fan, which is located at the escapement shaft, and ladders have been put in the escapement shaft.

A. E. Bauer, Manager.

Peter Neil, Mine Manager.

BARTELS' COAL MINE.

This shaft is located within the corporate limits of the city of Carlenville, on the south side. An escapement shaft has been sunk. The owners are sinking another hoisting shaft, and have put up a pair of twin engines, 2d motion, for hoisting; engines, 10x16; drum, 4; boiler, 44x18. This is a local shaft, not shipping any coal. The works are all laid out in double entry plan, and are in very good condition.

Wm. Bartels, Manager.

GILLESPIE COAL AND MINING CO.

This shaft was worked very successfully up to the 1st of March, when it was stopped, owing to the strike in the Staunton district, and is not in operation at present. Everything around the mine is in good order. The ventilation is good. The underground workings are in good order, and a Murphy fan is used for ventilation.

O. F. McKinney, Superintendent.

Wm. Opie, Mine Manager.

DORSEY COAL CO.

This shaft has not been worked since the 1st of March, owing to the strike in the Staunton district. The underground works are in good condition; ventilation good, secured by a Murphy fan. Ladders have not yet been put into the new escapement shaft, but a notice has been served on the company to have them supplied.

S. Dorsey, Superintendent.

A. Butters, Manager.

VIRDEN COAL CO.

This shaft has only been worked about half the time during the year, owing to losing the trade of the C. & A. Railroad, the Girard Coal Co. having underbid them and received the contract. Only the west side of the shaft is worked; it is opened up by double entries and in very good shape. The ventilation is fair, for which a 10 foot fan is used. There is a shale seam connected with this

shaft. The shale is used for the manufacture of paving brick and drain tile. The shale is hoisted out of the escapement shaft by friction gearing. Ladders are used from the coal seam to the shale seam.

J. W. Utt, Manager.

Owen Garrett, Mine Manager.

CHESTERFIELD COAL AND MINING CO.

During the year this company has sunk an escapement shaft which is just finished. Ladders will be put in and a ventilating fan erected at the escapement shaft. This is a long-wall mine. The coal seam is 2 feet 10 inches in thickness, of a very good quality. If water could be got at the mine this coal could be manufactured into a fair article of coke. Owing to the receivers of the Wabash system having taken some of the trains off the road, very little business has been done at the mine during the year.

Morris R. Locke, Superintendent.

J. Williams, Mine Manager.

MEDORA COAL COMPANY.

This mine was abandoned at the beginning of the fiscal year. No coal having been mined, the plant is for sale.

COLLIERIES IN MADISON COUNTY.

ELLSWORTH COAL COMPANY, COLLIERY No. 11, AT WORDEN.

This was originally the Worden Coal Company's shaft. It was bought in April by the Ellsworth Company. They are remodeling the entire works and double entries have been started. The shaft was stopped from March 1 to June 8, owing to the strike in the Staunton district.

Geo. Strebel, Superintendent.

Bruno Hebenstreit, Mine Manager.

COLLIERY No. 12, WORDEN.

This mine was originally owned by the Wabash Coal Co., and was stopped for want of an escapement shaft. It was bought in April by the Ellsworth Co., who at present are sinking an escapement shaft. A pair of double engines will be put in for hoisting, new boilers, and general improvements will be made to make this a first class colliery.

Geo. Strebel, Superintendent.

Sam Beard, Mine Manager.

ABBEY COAL AND MINING CO., COLLIERY No. 3, COLLINSVILLE.

A number of improvements have been made at this shaft during the year. A new hoisting engine, cylinder 14x20, has been set up, an entire new head frame erected, and 10 locomotive chutes put up with new platforms. A new engine house has been erected with water tanks, etc., the works having all been covered in with corrugated iron, and two new boilers are now being set up. The capacity of the mine has been considerably increased. The coal is all mined by machinery. The Harrison machines are being used and an average of 7 machines are in operation daily, each machine having a capacity of 65 to 70 tons. The machine miners, loaders, blasters, timbermen, etc., are all paid by the day. There are on an average about 11 men to each machine, including loaders and timbermen. This is the most successful machine mine in the 4th district.

General Manager, W. R. Crandall; Superintendent, Wm. Fletcher; Mine Manager, Peter Greaves.

LUMAGHI'S MINE.

This mine has been run only about one-half the time during the year, owing to disputes about the weighing of coal and other matters. The operator put up a scale to weigh the coal as it came out of the shaft, a certain per centage being allowed for slack. The operator claimed the coal would not hold out when hauled off the cars in St. Louis, hence the stopping. A fan will be erected at the escapement shaft to improve the ventilation of the mine.

Jos. Lumaghi, Sup't; Jas. McKernan, Manager.

COLLINSVILLE COAL AND MINING CO.

This shaft has worked very steadily during the year. A new 10 foot fan has been erected at the escapement shaft, doing away with the furnace, and increasing the ventilation fully one-half. Putting in the fan enables the operator to get coal in parts of the mine where it could not be got while using the old furnace, as the shaft was too shallow to successfully use a furnace.

Jos. Wickliff, Sup't; Martin Fulton, Mine Manager.

CANTEEN COAL AND MINING CO.

This mine has been worked very steadily during the year. A new 10 foot fan has been erected at the escapement shaft, worked by wire rope gearing, the power being transmitted by wire rope from the screen engine. Bearing wheels made of wood are set on posts about 30 feet from the ground. The engine is kept running continually for the fan, and when the screens are to be used connection is made by clutch gearing; a $\frac{3}{8}$ tiller rope is used to transmit the power, and the fan gives adequate ventilation for the mine.

George Gerding, Manager.

HEINTZ' BLUFF COAL AND MINING CO.

This mine has been worked very successfully during the year, and has been well managed. The works have been opened up on the double entry system. The manager is now putting in machines for mining the coal. A Norwalk compressor and Harrison mining machines will be used. A 10 foot fan will be erected at the escapement shaft, to be run by rope gearing, the power to be transmitted by wire rope from the screen engine, a distance of 700 feet. The hoisting shaft has been partly retimbered during the year.

Howard Wickliff, Sup't; R. Lindley, Mine Manager.

BROOKSIDE COAL CO.

This mine has been worked very steadily during the year. The ventilation has been improved by removing the fan to the new escapement shaft. A 48 inch Murphy fan is used for ventilation, ladders have been put in the escapement shaft, and the mine at present is in very good order.

Wm. Freaudanan, Sup't; John Evans, Jr., Mine Manager.

CONFIDENCE COAL MINING CO.

This is a machine shaft, working on an average 5 Harrison machines. The mine has worked very smoothly during the year. The works are starting up on the double entry system, which will give a better chance to carry the air up to the working face. Part of the escapement shaft has been retimbered.

Jule Weisenberg, Sup't; Felix Smith, Mine Manager.

WOLF & BROS. COAL MINE.

This mine has been opened up during the year with double entries, all single entry work being abandoned, and a new 10 foot Brazil fan has been erected at the escapement shaft. The works are now well ventilated, and the management of the mine is very good.

Otto Wolf, Sup't; Jos. Schawyer, Manager.

TROY COAL AND MINING CO.

The coal seam at this mine is No. 7 of the general strata of the State; the coal is of a very fine quality and very dense. Experiments have been made during the year to work the coal on the long-wall system, but failed. The roof slate breaks off short, and will not pull over the top of the coal. The present mode of working is to drive entries 22 feet wide with a building of slate in the centre, making virtually double entries, and carrying the air to the face. Bolt holes for hauling roads are driven from the sides of entries, and after passing in for a distance of 20 feet are holed, and a breast of coal 100 feet wide taken up, meeting a breast of coal 100 feet wide coming from entry above. This is a machine shaft, an average of 5 Harrison machines being used. An escapement shaft will be sunk this fall.

Donk Bros., Managers. John Evans, Mine Manager.

McDONALD COAL CO.

This mine has employed on an average about 25 miners. The works have been opened up on the double entry plan, and since the finishing of the escapement shaft the ventilation is very good. A 10 foot fan is located at the escapement shaft.

D. McDonald, Manager.

FRANK SHERMACH'S MINE.

This is a new shaft just finished, and entries will be driven to the old shaft for escapement. The owner has bought the engines and boiler of the Gaffney mine, which was abandoned two years ago, to be used on the new shaft. The double entry system will be adopted in the new mine and a fan will be used for ventilation.

Frank Shermach, Manager.

COLLIERIES IN SANGAMON COUNTY.

AUBURN COAL CO.

Some improvements have been made at this mine during the year as regards a better system of ventilation, and the air-courses have been made wider. Both escapement shaft and hoisting shaft are used as downcasts. The hoisting shaft has an air chamber for the furnace. Very little business is done at this shaft during the summer months. A small cage is used in the escapement shaft, and in case miners have to be taken out that way, a small hoisting engine is provided.

H. Dawson, Jr., Manager; P. M. Yoakley, Mine Manager.

WABASH COAL CO.

Colliery No. 1.--This is the old shaft at South Springfield. The works were laid out in single entry at the beginning, and changed afterwards to double entry. The mine is not very successfully ventilated, owing to a furnace being used. The shaft, only being 250 feet deep, is too shallow to be ventilated successfully by a furnace. A fan would pay for itself in one year. A twelve-foot fan would give three times the air that the present furnace will give, while the furnace would require two tons of coal in 24 hours, besides the cost of men to attend to it. It is not good management in a company to try to ventilate such a shallow shaft with a furnace.

T. P. Mowitt, Sup't; Thos. Reid, Mine Manager.

BLACK DIAMOND MINE.

This mine has changed hands during the year, the original owner, Mr. Speed Butler, having died. The shaft is now leased to John W. Moore, Thos. Gray and Robt. Solomon. The mine, during the

year, has not been up to the requirements of the law as regards ventilation and the closing up of worked-out rooms. The new firm has promised to put everything in shape according to law.

John W. Moore, Secretary; Thos. Gray, Outside Manager; Robt. Solomon, Mine Manager.

SPRINGFIELD CO-OPERATIVE COAL CO.

This shaft has been worked very successfully during the last year. The ventilation is very good; 22,000 cubic feet of air is given by the fan at the foot of the downcast, and is circulated without much loss to the face of the workings. An eight-foot fan is used for ventilation. The underground workings are kept in a very fair condition.

George Neilson, Manager.

BARCLAY COAL AND MINING CO.

This shaft was run very steadily during the winter, but in the summer it is only worked about half time. The ventilation is very fair; a six-foot Murphy fan is used. Everything is kept in very fair order below, and the ventilation has been improved during the year by widening the air-courses and splitting the currents. Overcasts have also been put in.

Wm. Graham, Manager.

WILMINGTON AND SPRINGFIELD COAL CO.

The ventilation has been improved in this shaft during the year. The air-courses have been enlarged. The air-chamber at the bottom of the hoisting shaft enlarged, and the total quantity of air passing in three splits May 22, 1885, was 22,000 cubic feet. A year ago only 13,000 cubic feet were passing in the mine. Black damp was found in the traveling-way used for escapement to the Springfield Co-operative shaft. The regulator in the door set in the traveling-way was enlarged, which soon cleared out the black damp. The old workings on each side of the traveling-way make large quantities of black damp, and if there is any leak in the stoppings the black damp passes out. As a general thing this shaft is in a very fair condition considering that the workings are old and all single entry.

Harris Hickox, Sup't; Edward Edwards, Mine Manager.

SANGAMON COAL AND MINING COMPANY.

The No. 1 shaft of this company has not been working during the year. No. 2 has been working all the year, and on full time. There have been some improvements made in No. 2. The escapement shaft has been finished and ladders put in, and the ventilation is good. This company has bought the No. 2 shaft of the Riverton Coal company, which will be designated No. 3 of the Sangamon Coal company. The shaft is located one mile north of the

old Riverton shaft. Entries have been driven from each shaft for an escapement for both. The shaft is located on the Illinois Central railroad, and has a royalty of 371 acres. The works are opened on the double entry plan. The shaft is 230 feet deep. The ventilation is by a 6-foot Murphy fan, giving 35,000 cubic feet, in two splits. All the outside works are in good condition. The coal is hoisted by double, first motion engines 16x32, Litchfield make; drum 6 feet, rope 1½ inch.

Joseph Hann, Manager Sangamon Coal Co.

RIVERTON COAL AND MINING COMPANY.

This shaft has had some improvements made during the year. The old furnace has been abandoned, and a 12-foot Brazil fan set up on the air chamber of the hoisting shaft, which gives over twice the quantity of air the furnace gave. The workings were extended too far for the furnace. A pair of double entries have been driven nearly a mile, to make an escapement shaft for the No. 3 of the Sangamon company. The Riverton company recently owned the No. 3 Sangamon company's shaft. These entries are now cut off since the holing has been made, which has shortened the air courses, giving more ventilation to the other parts of the mine. This is one of the oldest mines in Sangamon county, and has been worked very extensively.

Robt. Jess, Supt.; John Hickey, Mine Manager.

CAPITAL CO-OPERATIVE SHAFT.

One of the boilers at this shaft exploded Feb. 16, 1885, killing the engineer, Wm. Daughton. The boiler and engine house were a total wreck. Everything has been built up again, and two new steel boilers put in. A new 12-foot Brazil fan has been set up on the air chamber of the hoisting shaft, which will give adequate ventilation for the mine. The old furnace has been abandoned, not having had power enough to ventilate the mine. Ladders have been put in escapement shaft.

James Ryan, Manager.

WABASH COAL AND MINING CO. NO. 2 COLLIERY, AT DAWSON.

This shaft has been worked nearly up to its full capacity. The coal averages 5½ feet thick, and is of a very fair quality. This seam is not so much troubled with "horseback" and clay slips as the mines around Springfield. The ventilation is very good. An 8-foot Murphy fan is used for ventilation, and everything is in good order below. The air has been split, and air crossings put in during the year.

T. P. Mowitt, Manager.

WEST END COAL COMPANY.

The top works of this company were destroyed by fire in August, 1884, and subsequently rebuilt by the insurance company. The furnace

has been abandoned and a 12-foot Brazil fan set up on the escapement shaft. The fan gives twice the air of the furnace, showing a total of 35,000 cubic feet in three splits. The mine is now well ventilated and everything is in good working order. Ladders have been put in the escapement shaft.

Robt. Green, Manager.

PLEASANT PLAINS COAL AND MINING CO.

This company has sunk a new shaft, half a mile west of the village of Pleasant Plains, Sangamon county. The old shaft east of the town has been abandoned. The new shaft is located on the Ohio and Mississippi railroad. The shaft is 135 feet deep, and the coal is hoisted by a pair of 10x16 engines, second motion. An upright boiler is used for steam. The mine is opened up on the double-entry plan. The shaft has been in operation eight months. An escapement shaft will be sunk within the time allowed by law.

John Galloway, Manager.

COLLIERIES IN MACON COUNTY.

DECATUR COAL CO.

This shaft has been worked very successfully during the year, having increased their output 15,000 tons. Their new hoisting shaft, to be used as an escapement, is down 350 feet, and in very good shape. At a depth of 30 feet from the surface a bed of quicksand was found, and a running crib had to be used in sinking through it. The crib was made of 10x12 timbers, and was run down by weights through the sand. At a depth of 60 feet a seam of blue clay was found. Drift timbers were put in to try and arrest the crib here. The shaft was then making from 50 to 60 cubic feet of water per minute. Below the blue clay sand and gravel were found. The blue clay being only 4 feet thick it gave away and carried the crib into the lower sand, to a depth of 133 feet from the surface. At this point a resting place was found for the crib. The shaft was sunk 6 feet deeper on an offset of 18 inches. Here a lining of 8x12 timbers was started, and carried up above the upper sand. A puddle wall of cement was carried up between the timbers to shut off the water. Three small seams of coal were passed through in sinking, one 10 inches, one 12 inches and one 1 inch, the latter at 310 feet from the surface. At a depth of 324 feet a hard flinty lime stone was found, 11 feet in thickness, equivalent to the Carlinville and Shoal Creek limestone, the dividing line between the upper and lower coal measures. Bituminous shale was found below the limestone, equivalent to the horizon of coal No. 8 of the general section of the State. This will be one of the best constructed shafts in the State when finished. It is very substantially timbered and of good size. An air chamber is being carried down at one end, having an area of 50 feet for ventilation. The 8-foot fan at the

old hoisting shaft is now being replaced by a 12-foot fan. The number of men and mules now at work, and the extension of the mine, has rendered the capacity of the 8-foot fan inadequate.

Mark Moran, General Manager.

NIANTIC COAL CO.

This shaft has been worked only about one-half its capacity during the year. A new escapement shaft has been finished, and ladders put in from top to bottom. The underground workings are in fair condition. A new fan will have to be erected, as the underground workings are getting extended too far for the present fan, which is very improperly constructed.

T. H. Mooney, Superintendent; M. A. Leonard, Mine Manager.

COLLIERY IN EDGAR COUNTY.

DREW AND WASSON COAL COMPANY.

This is the shaft that originally belonged to the Illiana Coal Co., located at Illiana, having been leased to the Drew and Wasson Coal Co. This company has a number of mines in Indiana. The new company is putting everything in good order around the mine, putting ladders in escapement shaft and cleaning out the air courses. The work has been changed from long-wall to pillar-and-room.

John Watson, Superintendent; Henry Robinson, Mine Manager.

COLLIERIES IN BOND COUNTY.

SORRENTO COAL COMPANY.

This shaft is located within the corporate limits of the village of Sorrento, and at the intersection of the Jacksonville and Southeastern and Toledo, Cincinnati and St. Louis Railroads. The seam of coal averages $7\frac{1}{2}$ feet thick, and is No. 6 of the general strata of the State. The coal was hoisted for the first time in November, 1884. A single engine on second motion is used to hoist the coal. The engine is 14x28, and there is one boiler 42x22. A 7-foot drum and $1\frac{1}{8}$ inch rope is used for hoisting. The shaft is 373 feet deep. The roof is not so good here as at Mt. Olive. There are about 2 feet of slate and 11 feet of rock, very poor. About 20 miners are at present employed. The shaft pillars have not been holed around yet.

Chas. Pullen, Manager.

SMITHSBORO COAL AND MINING CO.

This a new shaft just sunk to the coal, a distance of 450 feet, to a seam $4\frac{1}{2}$ feet thick. The shaft has been well sunk and timbered in a very substantial manner. The coal is of a very good quality, very dense and free from sulphur.

Samuel Ainsworth, Manager.

COLLIERIES IN MORGAN COUNTY.

APPLE CREEK COAL CO.

This is a new shaft, located within the corporate limits of the village of Franklin, Morgan county, on the Jacksonville and South-eastern Railroad. The shaft is 202 feet deep, and the coal seam $4\frac{1}{2}$ feet in thickness. The company sunk 138 feet below the present seam. A drill hole had previously been sunk and a 6-foot seam reported, but upon reaching this level with the shaft the coal was found to be only $2\frac{1}{2}$ feet thick. The works are opened up with double entries and are in good shape; an 8-foot Brazil fan has been put in to secure good ventilation. The company is at present sinking an escapement shaft. When finished the fan will be located there. The coal is hoisted by twin first motion engines Litchfield make, with all the latest appliances; disk indicator connected by worm gearing, and relief valve. Two cylinder boilers are used for steam, each 42x22; the hoisting drum is 5 feet in diameter, ropes $1\frac{1}{8}$ inch, head sheaves 5 feet. Fan engine, is 6x12, geared direct to the fan shaft. The air is split at the bottom of the downcast with a capacity of 8,000 cubic feet in each split.

Barnard Gavin, Manager.

FARMERS' COAL CO.

This is a new shaft, located within the incorporated limits of Neelyville, on the Wabash, St. Louis and Pacific Railroad. It is a co-operative company, consisting of John Murray, Edward Holt, Neil Donald, John Quigley, Laffette Weinesberg, F. H. Donald, Carnipple and Seeman. The shaft is 50 feet deep, and the coal seam $2\frac{1}{2}$ feet thick, No. 1 coal. The entries are opened up 20 feet wide, with a six-foot wall in the centre, built of slate, making it virtually double entries. The mine is ventilated by a furnace on top. The coal is hoisted by a single engine 10x20, second motion; one boiler 24x36; hoisting rope 1 inch. They have a royalty of about 170 acres. The company is at present sinking an escapement shaft. At my first visit the shaft was in a deplorable condition, but is now in good order. Gates have been put around the shaft, covers on the cages, and new ropes.

John Murray, Mine Manager.

COLLIERY IN SCOTT COUNTY.

WM. H. BATES & Co.

This shaft is located one mile north of Winchester, on the Chicago, Burlington and Quincy Railroad. There have been some improvements made in this mine during the year. Iron track has been put in all the entries. Formerly the miners themselves pushed the coal to the shaft; now laborers are employed to do it. The entries are extended for a distance of 1,800 feet. The underground works are in very good order, and the ventilation good. This is a very

fair quality of coal, and is seam No. 1. It is nearly all blasted with powder. The coal is $2\frac{1}{2}$ feet thick. Hand-power geared drills could be very economically used here, as it is very laborious work for a miner to use the common, ordinary hand drill in such a low seam of coal.

Wm. H. Bates, Manager.

COLLIERY IN COLES COUNTY.

MATTOON COAL AND MINING Co.

Considerable improvement has been made at this shaft during the year, both above and below. The return air-courses, when the present management took charge of the works, were nearly closed up; 30 cubic feet per man per minute was all the air that could be obtained with the fan. The air-courses have all been repaired and cleaned out, so that now there is over 100 feet of air per man. The hauling roads have been made wider, and the partings at the bottom of the shaft retimbered and made higher. The underground works are now in a tolerably fair condition. The company had some trouble in securing a site for an escapement shaft, but now the ground is secured and the company is sinking another hoisting shaft, to be used as an escapement. The shaft is going down at the intersection of the Illinois Central and Peoria, Decatur and Evansville railroads, and it will be pushed ahead until completed. Timbers 10x12 will be used for cribbing timbers. If much water is met with an inside lining of 8x10 timbers will be put in, with a puddling wall of 4 inches of Portland cement. It is the intention of the company to puddle all shaft water back.

Jas. P. Cummings, Manager.

COLLIERY IN CHRISTIAN COUNTY.

PANA COAL AND MINING Co.

This shaft is located within the corporate limits of the village of Pana, and at the intersection of the Illinois Central, the Indianapolis and St. Louis, and Ohio and Mississippi railroads. The shaft is 742 feet deep. They began hoisting coal September, 1884. The shaft is 7x18 in the clear, having two cage ways and a fan chamber. The shaft is very substantially timbered, 10x12 timbers being used until the stone head was reached. The coal seam has an average of 7 feet in thickness, and is of very fair quality. Double engines are used for hoisting the coal, 20x48 cylinders, drum 10 feet in diameter, rope $1\frac{1}{2}$ inches. Two tons of coal are hoisted at a time. Coal is shipped on all three railroads, with chutes for locomotives on the I. & St. L. The underground works are laid out with double entries. A 12-foot fan has been erected for ventilation, giving 25,000 cubic feet of air in two splits. The mine has been

worked very successfully since it began operations. A 13x30 engine is used to run the fan and revolving screens. The screens are 42 inches 18 feet and are used to make 4 sizes of coal. Four flue boilers are used for steam with a brick smoke stack 6x8 in the clear.

Chas. A. White, Sup't; Hugh Hughes, Mine Manager.

LITCHFIELD COAL AND MINING CO.

It was the intention of this company to abandon this mine, not being able to compete with the larger seams at Mt. Olive and Gillespie. They have been working on pillars for the last two years. Now the company has leased the mine to Joseph Richardson, who has opened it up to the face of the solid coal, and is driving it forward on a long wall face. The traveling way to the old shaft for an escapement has been cleaned up and put in order. A fan will be located at the old shaft to ventilate the mine.

Jos. Richardson, Manager.

ROODHOUSE, GREENE Co., ILL.

Pocket coal has been discovered about 2 miles east of this place. The coal seems to lay about 25 feet above coal seam No. 1, and is thickest in the bed of the creeks. Two shafts have been put down to it, one by Campbell and Nelson, the other by Thos. Carter. The Campbell shaft is 26 feet to the top of the coal, and the coal is 13 feet thick. Five feet next to the top is of a very fine bituminous nature, free from sulphur and dross. Four feet next to the bottom is a very good coal for steam and house coal, and the bottom 2 feet is cannel coal. The upper 2 feet is block coal, and the 4 feet in the centre is soft and mixed with small slaty bands. At Carter's shaft the coal is 4 feet thick, having 6 inches cannel coal in the bottom. This coal burns to a white ash, and gives off no clinker and very little smoke. Since these shafts were opened the tile manufacturers of Whitehall and citizens of Whitehall and Roodhouse will not use the coal from seam No. 1, the pocket coal being of so much better quality.

BOND COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.								
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet	Thickness of coal—feet and inches.....	Geological No. of seam.	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of other employes, in and about mine.	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
Sorrento Coal Co.....	Sorrento.....	\$40,000	Shaft.	Steam.	373	7-6	6	P.R.	1	C. P.	15	4	150	180	1	1	\$0 62½	7,000	\$1 10
Smithsboro C. & M. Co.	Smithsboro ..	45,000			472						8	2							
Totals.....		\$85,000									23	6	150	180	1	1		7,000	

† Commenced to hoist coal Nov. 1, 1884.

* This is a new shaft, sunk to coal July 1, 1885.

; Cage-pressure.

CALHOUN COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital em- ployed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.								
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress...	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd	No. of other employes in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	Winter.....	Summer.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
Thomas Mines.....	Brussels.....	\$50,000	Slope	Horse.	2-6	1	P-R..	Fan..	3	2	90	...	...	...	...	\$0 75	\$0 75	200	\$1 35

This mine has been shut down since Dec., 1882. Two men are employed in summer and three in winter, to take care of the mine, and keep the water out, and mine a little coal for local consumption.

COLES COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.		EMPLOYES.				PRODUCT.										
Mattoon Mining Co.....	Mattoon	\$100,000	Shaft, Steam.	904	3-6	2	L-W	1	Fan..	90	60	216		3	3	\$0 60	\$0 75	31,000	\$1 25

This company is sinking an escapement shaft.

GREENE COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYEES.				PRODUCT.						
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam.....	Long-wall, or pillar and room workings.....	No. of places of egress ..	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed.....	No. of men injured (so as to lose time)	No. men killed during year.....	No. of kegs of powder used during the year	No. of days worked during the year.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....

*These two shafts are working on pocket coal.

JASPER COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.		EMPLOYES.							PRODUCT.								
					Ventilation, by fan, furnace or otherwise?.....	No. of places of egress. . .	Long-wall, or pillar and room workings	Geological No. of seam	Thickness of coal—feet and inches	Depth of coal below the surface—feet.....	Steam, horse or hand-power	Drift, slope or shaft.....	No. of men injured (so as to lose time)	No. men killed during year	No. of kegs of powder used during the year.....	No. of days worked during the year.....	No. of other employes, in and about mine.....	Number of miners employ'd	Price per ton paid for mining.	No. of tons of coal produced .....	Average value of coal per ton at the mine.....
F. Migh.....	Newton.....	\$5,000	Slope.	Horse.	90	3 15	P-R..	2	Fur..	12	12	2	225	35			\$1 00	\$1 00	8,100	\$2 00

JERSEY COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.											
			Drift, slope or shaft.....	Steam, horse or hand power	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of men injured (so as to lose time).....	No. men killed during year	No. of kegs of powder used during the year.....	No. of days worked during the year.....	No. of other employes in and about mine.	Price per ton paid for mining.	Winter	Summer	No. of tons of coal produced.....	Average value of coal per ton at the mine.	
Wm. Benson & Son .. Edward Fitzsimmons George Carus. Michael Burns. Marsh & Parent.....	Brighton..... " " " " " " Pla-a	\$500 300 400 300 500	Shaft.....	H. P. Man.....	50	3-6	6	6	P. R.	2	2	2	2	2	2	2	2	2	2	1,440	\$1 75	
			Drift.....	"	.....	3-6	6	"	"	"	2	2	2	2	2	2	2	2	2	400	1 75	
			"	"	.....	3-6	6	"	"	"	2	2	2	2	2	2	2	2	2	320	1 75	
			"	"	.....	3-6	6	"	"	"	2	2	2	2	2	2	2	2	2	150	1 75	
			Shaft.....	H. P. Man.....	20	3	6	"	"	"	2	2	2	2	2	2	2	2	2	2	420	1 75
Totals.....		\$2,000								10	1	850							\$1 00	\$1 00	2,865	\$1 75

MACOUPIN COUNTY—1885.

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Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.						EMPLOYEES.				PRODUCT.								
		Capital employed.	Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam.....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of other employees, in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....	
										Winter.....	Summer.....									
Ellsworth Coal & M. Co.	Staunton.....	\$100,000	Shaft.	Steam.	325	7	6	P. R.	2	Fan..	198	47	211	1,033			\$0 60	125,947	\$0 80	
No. 5 Colliery.....	"	110,000	"	"	322	7-6	6	"	2	"	236	52	218	1,392	1	1	60	157,898	80	
No. 6.....	"	100,000	"	"	300	7-6	6	"	1	"	45	15	200	231			60	28,008	80	
No. 7*	"	60,000	"	"	402	8	6	"	1	S. J.	60	11	214	357	2		60	51,873	80	
No. 8.....	Mount Olive.	48,000	"	"	416	8	6	"	2	Fur..	225	26	214	833	2		60	145,495	80	
No. 9.....	"	50,000	"	"	420	8	6	"	2	"	50	10	150	268			50	33,000	1 00	
No. 10.....	"	75,000	"	"	382	7-6	6	"	2	Fan..	20	45	300	797			60	44,400	1 00	
*Anchor Coal Co.	Staunton.....	2,500	"	Horse.	220	5-6	6	"	1	Nat'l	4	8	280	6			75	5,600	1 25	
Selvers' Mine.....	Bunker Hill.	28,000	"	Steam.	150	5-6	6	"	2	Fan..	75	125	215	900	1	1	50	86,000	1 00	
Bunker Hill Coal Co.	"	2,000	"	"	346	7-6	6	"	2	Fur..	95	110	30	212			50	87,018	1 00	
Rayson & Lock.....	Gillespie	75,000	"	Steam.	345	7-6	6	"	2	"	60	75	240	601				64,320	1 00	
Dorsey Coal Co.	"	80,000	"	"	390	7-6	6	"	2	"										
Gillespie Coal Co.	"	80,000	"	"																
*St. Barnard Coal Co.	Hornsby	100,000	"	"																
Carlinville Coal Co.	"		"	"																
No. 1 Colliery.....	Carlinville	25,000	"	"	280	6-6	6	"	1	S. J.			40	6			60	960	1 25	
No. 2.....	"	25,000	"	"	290	6-6	6	"	2	"	10	3	250	127			75	15,000	1 25	
H. Bartels & Son.....	"	15,000	"	"	230	6-6	6	"	2	Fur..	45	60	282	600			56½	43,992	1 00	
Noonan.....	Nilwood	30,000	"	"	325	6-8	6	"	2	"	75	100	15	300	1	5	60	97,000	1 15	
Girard Coal Co.	Girard	50,000	"	"	357	7	6	"	2	Fan..	40	100	15	275			56½	77,200	1 10	
J. W. Utt.....	Virden	50,000	"	"	320	7	6	"	2	"	10	20	6	200			75	4,500	1 75	
*Medora Coal Co.	Medora	30,000	"	"	280	2-10	1	L-W.	1	S. J.	2	4	200	2	1	1	62½	9,200	1 20	
Chesterfield C. & M. Co.	Chesterfield	35,000	"	"	240	2-10	1	P. R.	2	Fur..							60	2,200	1 25	
Brilley & Co.....	"	500	Drift..	Hand..		6														
Totals.....		\$1,091,000									1,250	1,659	285	4,061	9,991	7	9	\$0 57.5	1,080,211	\$0 93.5

* Machine mines. Anchor Coal Co. has not used the coal cutting machines during the year.

† Mine abandoned; plant for sale. ; Mines stopped for want of escapement shafts.

MADISON COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.													
			Drift, slope or shaft.....	Steam.	Shaft.	Drift.	Ventilation, by fan, furnace or otherwise?	No. of places of egress.....	Long-wall, or pillar and room working.....	Geological No. of seam ..	Thickness of coal—feet and inches.....	Depth of coal below the surface—feet.....	No. of men injured (so as to lose time).....	No. men killed during year	No. of kegs of powder used during the year.....	No. of days worked during the year.....	No. of other employees in about mine.....	Number of miners employed.....	Winter.....	Summer.....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....	
Abbey Coal and M. Co.,	C	\$65,000	..	..	Shaft.	146	6.8	6	..	P.R.	2	Fan.	75	75	28	240	773	6	..	..	\$0 50	95,702	\$0 75	
*No. 3 Colliery	nsville ..	40,000	..	..	..	150	6.8	6	..	..	2	Fur.	68	68	12	250	700	..	..	..	\$0 50	68,200	75	
Collinsville C. & M. Co.,	..	32,000	..	..	..	165	6.8	6	..	..	2	Fur.	27	27	10	182	301	..	..	..	41	21,840	75	
Lumaghi's Mine.....	..	34,000	..	..	..	168	6.8	6	..	..	2	Fan.	61	61	70	240	612	1	..	..	50	61,402	75	
Helair Bluff Mine.....	..	33,000	..	..	..	177	6.8	6	..	..	2	..	50	50	80	262	640	..	..	..	50	63,220	75	
Canteen Coal & M. Co.	..	60,000	..	..	..	216	6.8	6	..	..	2	..	45	45	15	225	675	1	1	..	50	47,102	75	
*Confidence C. & M. Co.	..	38,000	..	..	..	298	5	7	..	..	2	..	46	46	7	230	701	1	1	..	50	48,220	85	
Brookside C. & M. Co.	Troy	60,000	..	..	..	278	5	7	..	..	2	..	45	45	30	12	260	502	1	1	..	60	42,254	75
*Troy Coal & Min. Co.	Edwardsville.	35,000	..	..	..	217	5.6	6	..	..	2	Fur.	40	40	70	240	692	..	..	..	60	51,950	1 00	
Wolf Bros. C. & M. Co.,	..	15,000	..	..	..	150	5.6	6	..	..	2	..	15	15	28	220	228	..	..	..	60	18,208	1 00	
Shermacks Mine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Ellsworth Coal & M. Co.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
No. 11 Colliery	Worden	20,000	..	..	..	270	6.8	6	..	..	2	Fan.	40	40	52	200	600	..	..	..	60	33,214	1 00	
No. 12 Colliery	..	25,400	..	..	..	275	7	6	..	..	2	S. J.	25	25	6	20	10	..	..	..	50	33,942	75	
No. 12 Colliery	..	28,000	..	..	..	300	7	6	..	..	2	Fur.	24	24	35	212	160	1	1	..	60	21,001	75	
McDonald's Mine.....	..	..	..	..	..	40	2.4	1	..	..	2	Fur.	8	8	9	300	..	..	..	..	87½	3,842	1 50	
M. H. Roals & Co.	Alton Junction	1,200	Slope	Shaft.	Horse.	65	2.6	1	..	..	1	Nat'l	2	2	3	200	..	..	..	..	87½	1,210	1 50	
Thos. Watson's Mine...	North Alton...	500	..	..	..	74	2.6	1	..	..	1	Nat'l	3	3	8	1	200	..	..	..	87½	2,224	1 50	
Alex McDonald, Jr....	..	1,000	..	..	..	87	2.6	1	..	..	2	Fur.	9	9	12	160	..	..	..	..	1 00	3,104	1 50	
Nathan Sydel	..	1,000	..	..	..	93	2.6	1	..	..	2	Fur.	8	8	11	200	..	..	..	..	87½	3,000	1 50	
James Mitchell	..	800	..	..	..	65	2.6	1	..	..	1	Nat'l	4	4	10	210	..	..	..	..	87½	2,800	1 50	
Henry Camp	..	1,000	..	..	..	72	2.6	1	..	..	2	Fur.	4	4	16	240	..	..	..	..	87½	3,100	1 50	
Conlin & Co	..	800	..	..	..	89	2.6	1	..	..	2	Nat'l	2	2	3	100	..	..	..	..	87½	688	1 50	
*Baker & Co	Fosterburg ..	1,000	..	..	..	72	2.6	1	..	..	1	Nat'l	2	2	3	1	..	..	..	..	75	1,312	1 50	
Wm. Charnelsworth ..	..	800	..	..	..	60	4.6	6	..	..	1	..	2	2	3	1	..	..	..	..	75	..	..	
Fritz Ramls	..	800	..	..	..	60	4.6	6	..	..	1	..	2	2	3	1	..	..	..	..	75	..	..	

Myers & Blue	Bethalto	1,000 Sha	Horse	48	5	6	P-R	2	Fur	2	5	1	200	75	75	75	2,110	1 50
M. Myers	"	1,000	"	48	5	6	"	2	2	2	6	1	200	75	75	75	2,304	1 50
E. Green	Moro	600	"	60	5	6	"	2	2	2	2	1	220	75	75	75	902	1 50
T. Green	"	600	"	58	5	6	"	2	2	2	2	1	180	75	75	75	712	1 50
Wm. Richardson	"	700	"	59	5	6	"	2	2	2	3	1	230	75	75	75	1,210	1 50
Totals		\$497,300						613	746	143	5,621	6,464	2	10	\$0 54.2	\$0 54.7	601,816	\$0 83.6

*Machine mines. Miners paid by the day.

+New shaft, finished sinking July 1, 1885.

MORGAN COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.											
			Drift, slope or shaft.....	Steam, horse or hand-power	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise.....	Number of miners employed	No. of men injured (so as to lose time).....	No. men killed during year	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....					
Apple Creek Coal and Mining Co..... Farmers Coal Co.....	Franklin Neelyville...	\$35,000 4,000 \$39,000	Shaft..... ".....	Steam..... ".....	202 52	4-6 2-7	6 2	P-R. ".....	1 Fan. 1 Fur.	8 17	20 25	4 4	120 150	200 200	1 1	200 200	1 1	40 87½	\$0 62½ 1 00	\$0 62½ \$0 84 5	\$3,500 5,000 \$8,500	\$1 50 1 50 \$1 50
Totals																						

These two companies are sinking escapement shafts.

SANGAMON COUNTY—1885.

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Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.								
			Drift, slope or shaft.....	Steam, horse or hand-power	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd		No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time)	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine
											Summer.....	Winter							
Auburn Coal & Tile Co., Wabash Coal & Min. Co., No. 1 Colliery	Auburn.....	\$32,000	Shaft.	Steam.	268	6-6	6	P. R.	2	Fur.,	6	20	300	375	.....	.....	\$0 75	13,500	\$1 25
Iles Junction Dawson.....	Iles Junction.....	40,000	..	..	250	5-6	5	..	..	Fan.,	60	86	295	1,924	.....	.....	62½	46,374	1 00
Black Diamond Mine	Iles Junction.....	42,000	..	..	250	5-6	5	..	..	..	58	52	211	1,912	.....	.....	65	39,643	1 00
Springfield Co-op. Coal Co.,.....	Ridgely.....	32,000	..	..	250	5-6	5	..	2	..	50	100	281	1,500	.....	.....	50	40,000	1 00
Wilmington & Springfield Coal Co.,.....	..	28,000	..	..	250	5-6	5	..	..	..	30	60	300	1,800	.....	1	62½	46,728	1 25
West End Coal Co., Capital Co-op. Coal Co., Sangamon Coal & M. Co., No. 1 Colliery.....	Springfield... ..	35,000	..	..	250	5-6	5	..	2	..	100	125	40	300	2,200	.....	62½	92,000	1 00
No. 2 ..	..	37,000	..	..	150	5-6	5	..	2	..	45	110	24	210	2,000	.....	62½	50,000	1 05
No. 3 ..	..	37,000	..	..	242	5-6	5	..	2	..	45	55	26	260	1,900	2	62½	48,480	1 15
Barclay Coal & M. Co., Riverton Coal & M. Co., Consolidated Coal & M. Co., No. 1 Colliery.....	Sangamon ..	40,000	..	..	240	5-6	5	..	2	..	150	150	25	200	4,000	.....	62½	108,304	1 00
No. 2 ..	..	45,000	..	..	265	5-6	5	..	2	..	15	25	6	210	600	.....	60	12,200	1 00
Beard & Goodwin	Barclay ..	38,000	..	..	240	5-6	5	..	2	..	40	85	10	225	1,200	.....	60	32,000	1 10
Chatham Coal Co.,.....	Riverton ..	42,000	..	..	240	5-6	5	..	2	..	150	175	38	233	4,504	.....	60	117,000	1 00
Totals	Pleasant Plains ..	45,000	..	..	200	5-6	5	..	2	..	6	16	3	300	100	.....	75	3,500	1 25
	No. 2 ..	24,000	..	..	126	5-6	5	..	1	Fur.,	..	..	..	..	..	.....	.....	.....	.....
	..	18,000	..	..	130	6	5	..	1	Nat'l	..	..	..	..	..	.....	.....	.....	.....
	Springfield ..	5,000	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....	.....	.....
	Chatham ..	3,000	..	..	..	..	..	..	..	..	755	1,059	274	3,825	24,045	2	\$0 61.6	649,728	\$1 04
	Totals	\$543,000	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....	.....	.....

* Shafts being sunk. + Mine abandoned.

SCOTT COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.							EMPLOYES.				PRODUCT.					
		Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	Winter	Summer.....	No. of men injured (so as to lose time).....	No. men killed during year	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....

SHELBY COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYERS.				PRODUCT.										
			Drift, slope or shaft.....	Steam, horse or hand-power	Depth of coal below the surface—feet	Thickness of coal—feet and inches	Geological No. of seam....	Long-wall, or pillar and room workings, ...	No. of places of egress ...	Ventilation, by fan, furnace or otherwise.....	Number of miners employ'd	No. of other employes in and about mine.	No. of days worked during the year	No. of kegs of powder used during the year	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	Winter	Summer.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....
J hn Richardson.....	Shelbyville.....	\$1,000	shaft	Horse.	95	2	15	P-R	2	Fur..	8	1	1	210	.....	.....	.....	\$1 75	\$1 75	1,810	\$2 50
John Minto.....	Robins'n Cr'k.....	1,000	"	"	90	4	15	"	"	"	4	1	1	222	.....	.....	.....	1 75	1 75	1,311	2 50
Kurz & Nolan.....	Shelbyville.....	1,000	"	"	90	15	15	"	"	"	8	1	1	200	.....	.....	.....	1 75	1 75	1,620	2 50
Micha'l Brophy.....	"	700	"	"	90	2	15	"	"	"	4	1	1	210	.....	.....	.....	1 75	1 75	1,420	2 50
Wm. Kelley.....	"	800	"	"	50	2	15	"	"	"	3	1	1	180	.....	.....	.....	1 75	1 75	2,200	2 50
P. Porter.....	Robins'n Cr'k.....	700	"	"	85	2	15	"	"	"	5	2	2	225	.....	.....	.....	1 00	1 00	2,200	1 50
Wm. Hilsabeck.....	Fancher	1,000	"	"	50	2	15	"	"	"	6	15	15	.....	.....	.....	.....	1 00	1 00	2,200	1 50
Totals .....	.....	\$6,200	.....	.....	.....	.....	.....	.....	.....	.....	39	8	8	1,447	.....	.....	.....	\$1 51	\$1 51	10,181	\$2 28

RECAPITULATION BY COUNTIES—FOURTH DISTRICT.

Counties.	Capital employed.	Kinds of power employed.	Kinds of openings.	Modes of working coal.	No. of miners and other employees.			Average price per ton paid for mining.	No. of mines without escapement shaft.	No. of mines with escapement shaft.	Average price of coal per ton at the mines.	No. of tons of coal produced.	Kinds of power used for ventilation.
					Double entry.	Single entry.	Long wall.						Natural.....
													Steam jet ...
													Furnace.....
													Fan.....
Bond.....	\$85,000	2	1	2	2	1	2	\$0 62.5	180	1	7,000	1 10	2
Calhoun.....	50,000	1	1	1	1	1	1	75	90	1	2,200	1 35	1
Christian.....	60,000	1	1	1	1	1	1	50	337	1	33,203	1 63	1
Coles.....	100,000	1	1	1	1	1	1	60	216	1	31,000	1 25	1
Edgar.....	55,000	1	1	1	1	1	1	60	200	1	16,200	1 25	1
Greene.....	3,980	1	1	1	1	1	1	100	228	1	16,080	1 75	1
Jasper.....	5,000	1	1	1	1	1	1	100	225	1	8,100	2 00	1
Jersey.....	2,000	1	1	1	1	1	1	100	170	1	2,865	1 75	1
Macon.....	150,000	1	1	1	1	1	1	68.3	269	1	132,000	1 33	1
Macoupin.....	1,091,000	2	1	2	1	1	1	58.4	307	1	1,080,211	1 93.5	1
Madison.....	497,300	2	1	2	1	1	1	57.5	263	1	601,816	83.6	1
Montgomery.....	15,000	1	1	1	1	1	1	54.7	208	1	601,816	83.6	1
Morgan.....	39,000	1	1	1	1	1	1	75	210	1	8,957	1 20	1
Sangamon.....	543,000	2	1	2	1	1	1	81.5	135	1	8,500	1 30	1
Scott.....	8,750	2	1	2	1	1	1	68.4	256	1	649,728	1 61	1
Shelby.....	6,200	1	1	1	1	1	1	114	217	1	9,930	1 57	1
Totals.....	\$2,711,250	23	11	23	61	43	99	1 51	207	80	2,615,992	\$0 38.5	6*14

* Cage pressure.

FIFTH DISTRICT.

EMBRACING CLINTON, GALLATIN, JACKSON, MARION,
PERRY, RANDOLPH, SALINE, ST. CLAIR, WASH-
INGTON AND WILLIAMSON COUNTIES.

ROBERT WINNING, Cartersville, *Inspector*.

MR. JOHN S. LORD,

Secretary of the Board of Labor Statistics of the State of Illinois:

SIR: Again I have the honor of submitting my annual report, as Inspector of Mines. After two years of labor in this district, I am gratified to be assured that the great majority of the miners are well pleased with what has been accomplished. The most general complaint is in regard to screens, and the justice of this may be understood when it is considered that no uniformity in their dimensions is found, but that they vary from 6 to 20 feet in length, from 4 to 12 feet in width, and that the space between the bars is from $\frac{7}{8}$ of an inch to $1\frac{1}{2}$ inches. This diversity in such an essential matter naturally creates a good deal of dissatisfaction among those who suffer most from loss of coal through screens. The only practicable remedy seems to be a law requiring the coal to be weighed before being screened at all. Prices can just as well be adjusted on this basis, and then each company can screen the coal to suit its specific demand. It would certainly obviate much of the bitterness and conflict between operators and men, and no object is worthier of the consideration of legislators. There have been numerous conflicts of this character during the year in this district, owing to the disposition on all sides to reduce the price of coal and the price of mining with it, and there has been the usual desperate resistance on the part of men already reduced to hunger by the meagerness of their wages. It is devoutly to be hoped that the operators of this district, especially those supplying the St. Louis market, may adjust these differences before the new season begins, and establish such a market price as to place the business on a legitimate footing, and afford the miner living wages.

There are 126 mines in this district, 75 of which are in St. Clair county, and there are six not included in the 126 which are idle. The production for the district is 2,096,128 tons, a falling off of 30,000 tons from last year. Could accurate accounts of the strip-pings and small openings be obtained, there would be a somewhat better showing.

Gallatin county has been dropped from the list of counties in this report. The Equality Coal Co. give their production from their slope opening, which is in Saline county, the shaft in Gallatin being idle nearly all year.

ST. CLAIR COUNTY.

In my last report there were 70 mines given for this county, 49 of which had escapements. This year there are 75 mines in operation, 65 having escapements and 10 having none. Some of those having none are preparing to sink them, and at one the second opening is already made, but it requires a fan, as the passage is used for a furnace shaft. This place has been lately sold; and at another which has recently passed into new hands, the company promises either to sink an escapement shaft or abandon the mine.

There were 8 fans in operation last year, and there are now 16 in this county, and more are promised.

PERRY COUNTY.

There are 14 mines in this county this year, which is one less than were reported last year. Of these, three are idle, and all have escapement shafts except the Gallum mine, which has sunk one as far as the rock, immediately over the coal, but can go no farther for want of funds. The owners of one mine were obliged to enlarge their escapement shaft. There are three fans in operation in the county.

JACKSON COUNTY.

There are 7 mines in operation in this county, all of which are supplied with escapement shafts; one of them being a new opening at Bryden, on the Narrow Gauge railroad.

The St. Louis Ore and Steel Co. have abandoned their No. 5 shaft, which was their escape for the tunnel.

Mr. A. J. Simpson deserves special mention for his ready acquiescence in the requirements of the law. As soon as his attention was called to the want of an escapement, he built a fan at the top of the furnace shaft, and thus utilized it for an escapement. This company has sunk another shaft on the Murphysboro side of the Big Muddy. It is constructed on the right principle, having a

compartment 8x8 feet for the down-cast. They will sink an escapement within the time required by law. These improvements have been made out of the profits of the business, and it is said Mt. Carbon mines have not been successfully operated before in many years.

RANDOLPH COUNTY.

Last year there were 9 mines in this county, 4 of which had escapements. This year 10 mines are reported, 7 having escapement shafts in use, and 2 in process of construction. Three of the mines are hoisting with steam, and another is preparing for it, the engine having been purchased some time since. There has been one fan erected in the county at Coulterville.

WILLIAMSON COUNTY.

The situation in this county remains about the same as when last reported. The Carbondale Coal and Coke Co.'s mines passed into the hands of a receiver last October, and the slope has since been operated only to supply local trade. The decrease in the product for this county has been over 50,000 tons. There were some small openings made for local purposes, during the winter, and since abandoned, which may be opened again next winter. There is also some prospect of other mines being opened in the county.

SALINE COUNTY.

With Bald Knob and Donahue's mines there are nine mines, all of which now have escapements. At New Castle the company have sunk their shaft to the seam below the one heretofore worked, and they are erecting an engine for hoisting purposes.

The Eldorado Coal Co. has a slope in this county, on the Louisville and Nashville railroad. They have an escapement, but it needs to be enlarged. There has been an increase of three escapements in the county during the year.

The Equality Coal Co. has erected a fan at their mine in Gallatin county, which makes 26 fans in operation in the district, and they are also sinking an escapement shaft.

WASHINGTON COUNTY.

There are three mines in this county producing coal, and a new shaft has been sunk to the coal at Ashley. This will be completed and equipped as soon as the necessary funds can be obtained. The Dubois company and the Nashville Coal Co. have both had their escapements furnished with ladders, and the Nashville shaft has

also a fan. The Dubois mine has had a large amount of work put on it, and needs as much more. The present manager is doing well. Mr. Brown, the superintendent, tells me that he has spent all the mine has made on the improvements required, and will continue to do so until he gets the mine in good condition.

The shaft at Okawville is supplying the local trade, a number of working men having leased it, and put it in working order. Here the only steel boiler in the district is in use.

CLINTON COUNTY.

Affairs in this county remain about the same as when last reported. The only two mines in it are in operation. The Breese Coal Co. requested me not to serve an injunction against them, as they would sink an escapement shaft as soon as possible, and sent me word they were contracting for the lumber for it. Mr. Hanke, of the other mine, has arranged with a St. Louis company to have a fan erected.

MARION COUNTY.

There are only two mines in this county, the Centralia and the Sandoval. The Centralia company is now working its new shaft, the buildings at the old one having burned down. They are repairing the machinery and framing of the old shaft to use as an escapement, all the coal being taken out at the new shaft.

At the Sandoval mine the work is progressing very well on the new shaft, which is intended to serve both as an escapement and as a hoisting shaft. It is designed on correct principles having a separate compartment for the air, to be used either as an up-cast or a down-cast. Both these mines are ventilated by fans.

REMARKS.

There have been two injunctions served against operators in the district during the year for not having escapements. Both cases were at small mines, but it has settled the disputed question as to whether the State had a right to compel operators to have properly equipped exits for use in emergencies.

I also had a man tried for failing to report an accident. He was fined twenty dollars and costs. This case was widely reported, and to this is due many subsequent reports of slight accidents.

New shafts are being sunk in various places throughout the district. There is one in St. Clair county, at O'Fallon, and three in Marion county, one at Kinmundy, one at Salem, and one at Odin.

I have been ably assisted by Mr. Frank Kirchner, county inspector for St. Clair county, and by Mr. Stewart Morris, county inspector for Jackson county.

I may also state that I have uniformly been received with courtesy and kindness by all with whom I have come in contact. Even when my authority has occasionally been questioned, and even denied, my personal relations have been friendly, and I have received evidences of confidence from operators and men, for which I wish here to return thanks.

There have been 59 accidents in the mines in this district during the year, seven of which were fatal. The accidents occurred in the following manner.

FATAL.

By falling coal	1	
By falling slate	2	
By gin	2	
By falling down shaft	1	
In sinking shaft	1	
Total		7

NON-FATAL.

By falling coal	17	
By falling slate	18	
By premature blasts	7	
By cars	8	
In sinking shaft	1	
By being cut with a pick	1	
Total ..		52

The seven deaths leave three widows and ten orphans. The death rate I consider high for the number of tons raised, being one death for every 277,449, the other casualties being one for every 40,310 tons raised, which I think is also high. There have been seventeen accidents by falling coal, some of which could have been avoided, as the miners themselves admit, when the causes are inquired into. Herewith I give detailed list of casualties and the names of the victims.

Very respectfully,

ROBERT WINNING,
Inspector 5th District.

FATAL ACCIDENTS.

At the Nashville mine, Nashville, Wm. Shindall, a married man, 27 years old, father of two children, was instantly killed on the 14th of October. He was timbering in sinking a shaft, and a plank which he was sending up became detached from the rope and fell about 100 feet, striking him on the head, and causing instant death.

At the Breese Coal Co.'s mine, at Breese, on the 1st of June, Edward Wheilmier, a single man, aged 23, was killed by a fall of slate. He was undermining coal when some loose slate came down

on him and struck him on the head back of the temple, and crushed in his skull, killing him instantly. The coronor's verdict found that he had been twice warned that the slate was loose.

On June 16, Obadiah Baillie, a widower, 52 years old, met his death at the mine of J. L. Weir, at Sparta. He had contracted to open a new drift for Mr. Weir, and in taking out the slate from the top the slate and clod fell on him, causing internal injuries from which he died on the 27th.

At the mine of R. S. Baillie, at DuQuoin, on August 6, R. S. Baillie, Jr., a son of the operator, aged 12 years, was accidentally killed. He was driving the gin horse at the top of the shaft, and in some unaccountable manner was caught between the rope and the gin and crushed to death.

On March 21, John E. Barton, aged 50 years, was killed at the Davenport & Barton mine, at Harrisburg. Mr. Barton was going to let something down the shaft, but forgot about the balance on the gin, and when he went back to the gin to stop it, the bow or saddle that goes over the horse's back struck him on the head. He lived twelve hours, but never spoke. He was one of the proprietors, and leaves a wife and five children.

John Buckley lost his life at the Menton mine, at Alma, on April 4th. He was standing on a plank at the mouth of the shaft while the ropes were being greased, and lost his balance and fell down the pit.

At D. Knecht's mine, Birekman, on March 14, August Schimer, a single man, was killed. He was a loader, and while loading the coal kept the sulphur beside him. A portion of overhanging slate fell on him and knocked him down on the sulphur, a piece of which was pressed into his side above the hip, causing injuries from which he died in five hours.

NON-FATAL ACCIDENTS.

At the Nashville mine, Nashville, Jacob Casey had his middle finger disjoined by the same accident which caused the death of Wm. Shindall.

At D. Knecht's mine, at Birkner, November 26, Joseph Pelts, aged 16, had his leg broken by falling slate, which gave way between the props while he was loading a box.

At the mine of J. S. Weir, Sparta, Robert Boyd was injured by the same accident which caused the death of Mr. O. Baillie. Mr. Boyd was a son-in-law of Mr. Baillie, and they were working at the same place. The slate which caused the accident struck first on Mr. Boyd's car and broke, part of it resting on the car and part on the floor, which kept the weight off of Mr. Boyd.

At Miltstadt's Union mine, at Miltstadt, on October 13, John Holm, a single man, aged 24, was hurt on the back by a fall of slate while he was loading a box.

On January 14, at the same place, Daniel Ringusen, aged 23 unmarried, was slightly hurt on the back by falling slate.

At the Rentchler Mining Co.'s mine, at Rentchler, on April 18, David W. Jones, 18 years old, was badly hurt. He was working at a standing shot, when it suddenly came down, crushing his foot so badly it had to be amputated above the ankle. He was immediately taken to the poor farm.

John Hemmington, aged 19, narrowly escaped being killed at the Rose Hill mine, at West Belleville, April 13. When going to the bottom he jumped on the tail chain, which, going down grade, became slackened, and he fell before the loaded boxes. The driver stopped the mule or he would have been killed; as it was he escaped with a bruise on his right leg above the ankle.

On February 27, in Kunn's Bros. mine, at Belleville, Wm. Walton was injured by a fall of coal. He was taking part of the seam called the drift, when another part, known as the nine-inch, came down on him and broke his leg in two places above the ankle.

Peter Steber, a married man, aged 56, was injured by a falling clod, which bruised him on the small of his back and under the left shoulder. He was working in the mine of Wm. Brandenberger, at West Belleville, where the accident occurred on the 26th of February.

At the Marissa Coal Co.'s mine, Marissa, on November 9, Charles Wines, aged 17, while loading his box, was hurt by overhanging slate, which came down on him and bruised his back.

At Harris Bros.' mine, West Belleville, on July 5, Charles Evelling, 37 years old, was hurt by a fall of standing shot. He had begun to mine it when it came down on him, striking him on the head, back and legs.

On September 16, at the Concordia mine, Belleville, David Burkhardt, aged 48, a married man, was badly injured by a fall of coal. He was undermining it when it came down on him and bruised his right shoulder, broke one rib, cut a hole in the right side of his head, and split his ear.

At the No. 2 shaft of C. Renicke, at Birkner, on December 6, John Schweinfurth and Fritz Hoffman, aged respectively 35 and 24 years, were injured at the same time by falling coal. Schweinfurth was bruised on the back and right foot, and Hoffman was severely hurt on his hip and back.

At No. 1 shaft, of the same company, at Belleville, February 3, Augustus Plank, aged 24, had his leg broken and was hurt on the back by falling slate. He tried to take it down but as it did not come easily he thought it would stay until he got the boxes filled with the last of the coal, as the room was done, but it came down on him.

At the same place, April 8, August Friend, aged 44, had his leg broken and the bone mashed by rock and clod falling on it as he was loading a box of coal.

On June 22, at A. Brandenberger's mine, at Wilderman, Reinhold Rosner, 27 years old, a single man, was hurt by a car running over his foot. He was a driver, and in bringing his trip to the bottom a miner's light frightened the mule, which turned quickly, and the tail chain caught Rosner and threw him down in front of the car. It passed over his foot, bruising it badly and twisting his ankle.

March 12, at the Dudley mine, Dudley, Charles Heneman, a married man, 30 years old, was bruised by falling coal, which came down on him while he was undermining it, striking him on the back and left shoulder.

At the Evan Harris mine, Birkner Station, September 24, James Wilson, 18 years old, was loading a box of coal when the slate broke between the props and fell on him, breaking his right leg above the ankle.

At the same place November 14, Wm. Mayer was injured by coal falling on him. He is the mine manager and had gone into room 10 to mine a standing shot. The coal came very suddenly and knocked him down and broke his leg.

Thomas Stark was hurt at the Morris mine, Lebanon, on October 14. He was loading his box when some overhanging slate fell and struck him on the left side. The doctor thinks a tube was bursted in his lung, but expects him to be all right again soon.

Herman Malkmus was shoveling for the machine at the Wm. Skellet mine, at Raabs Station, on August 6, when some bottom coal came over on him and bruised his leg at the knee and ankle.

At the above mine on September 27, Frank Guest, aged 24, was shoveling for the machine when the coal he was working at came down, striking him on the head and crushing his left arm badly.

At Schureman's Mine, Raabs Station, October 2, George Sauer, aged 71, was wedging down bottom coal when top coal and nine inch came down on him bruising him all over the body, especially on the left leg. He has wrought in the mine 58 years.

On July 28, Geo. Schumelbach, aged 24, was shoveling back clay at the Summit mine, Oglesby, and was standing under top coal that was cut, when it came down on him, bruising him across the hips.

On November 1, at the John Kloes mine, West Belleville, Alfred Tucker was mining, and had risen to show his partner where to place a wedge, and just as he went back to work some slate gave way, by a slip, and bruised his right arm, and cut the wrist, severing one of the nerves.

At New Castle, February 2, John Robertson, 54 years old, was burned by a premature discharge of a blast. He was drilling out a standing shot when the drill caught fire, and burned him on the breast and arms.

At the Bald Knob, of the Illinois Iron and Coal Co., at New Burnside, July 28, Harvey Latimer was hurt by falling slate. He was clearing back some of the slate that is in the middle of the coal, preparatory to working it, when some overhanging slate came down on him cutting his forehead and bruising him on the back.

At the Ledford mine, Ledford, March 7, John Stiff, aged 25, a driver, was coming out with his trip, when the car went off the track and knocked out a leg of cross bar, thus letting down a cross bar and some slate, which struck him and broke his left arm.

At the same place on June 24, James Bargassers, aged 56, was struck by falling slate. He had gone to do an errand for the manager, who was clearing away a fall of slate, and in coming back under it, it fell on him.

February 2d, at the Ledford mine, Ledford, James Harper, aged 38, was drilling out a standing shot when the drill cast fire and ignited the fire, which burned him on the face, breast and arms, injuring his eyes badly.

At the Enterprise mine, DuQuoin, January 7, Richard Burnett, aged 25, a single man, was knocking out a prop when the slate came down and bruised him on the head and back.

At the same place, Louis Stoldt, 32 years old and married, was undermining a standing shot when some slate came down on him and injured his spinal column. It is feared he will remain helpless.

December 20, at the Frizzell Coal Co.'s mine, at DuQuoin, John Golden broke his arm at the wrist by falling on it as he attempted to push a box.

At the St. Johns mine, St. Johns, November 26, Cassius McConnor, aged 38, a married man, was severely hurt by falling slate striking him on the back.

Patrick Bunn was hurt in a similar manner on December 20, at the same mine.

On May 1, at the same place, George Glick was injured by slate falling on him and knocking him over on the rail, which dislocated his left hip.

Joseph Brown was burned by powder at D. B. Boyd's mine, at Sparta, on November 12. He was carrying about a quart of powder in a can, when a spark from the lamp ignited it, and set fire to his shirt, burning him badly on his arms and face.

At J. Hanke's mine, at Trenton, on October 21, John Hogan, aged 27, a married man, had his collar bone broken by falling coal which came down on him while he was undermining a standing shot.

At the same place, on February 21, Daniel Fenn and August Schaffer were hurt at the same time by falling coal. No bones were broken. Fenn was rather badly bruised but Schaffer only slightly.

At the same place, April 18, Henry Ritzheimer, aged 30 years, was at work when a fellow workman accidentally stuck a pick in his leg above the ankle.

On October 24, at the Centralia Mining and Manufacturing Co.'s mine, Duncan Johnston, a married man, aged 25, had his leg broken by his mule running away and jamming him between the car and the rib.

At the above mine, in January, a trapper, whose name is not given, was squeezed between the roof and a car of coal and slightly hurt.

On January 29, Joseph Johnson and Ira Carper were working together and their shot missed fire; in drilling it out the drill cast fire, burning Johnson severely and Carper slightly.

March 24, at the mine of the St. Louis Ore and Steel Co., Murphysboro, John Holston, a married man, 50 years old, was injured by being jammed between the cars and the rib. He had

come to the mouth of the tunnel and stepped aside out of the way of the engine, which caught him between it and the wall, but he was not seriously hurt.

At the same place, May 4, Philip White, in firing a blast made the fuse too short and the blast went off before he could get away, and a piece of the coal struck him in the left eye with such force as to destroy the sight.

At the Harrison shaft, Murphysboro, September 22, Frank Howe made his fuse too short, and could not get away in time, and was burned on the face and arms by the explosion.

On August 16, at the Laflin slope, Carterville, John Haddfield, 40 years old and married, had his leg broken by coal which fell as he was taking down top coal.

At Dodd's shaft, Carterville, September 18, Matthew Walker, aged 22, a single man, and a driver, had his ankle dislocated by putting his knee to a car that was ahead of him on the track.

At the same place, on November 19, Martin Phillips had his left collar bone broken while he was taking down a standing shot. Part of it fell very suddenly and struck him on the shoulder.

CLINTON COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.										EMPLOYES.					PRODUCT.			
			Drift, slope or shaft.....	Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd.....	No. of other employes in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.....	No. of tons of coal produced.....	Average value of coal per ton at the mine.....		
Joseph Hanke.....	Trenton.....	\$50,000	Shaft.	Steam.	400	5-3	6	P. R..	2	St'm.	48	32	209	252	1	4	\$0 57.9	\$0 57.9	38,000	\$1 10	
Breese Mining Co.....	Breese.....	17,500	"	"	400	8-6	6	"	1	Fan..	40	9	300	500			41	50	21,442	80	
Totals.....		\$67,500									88	41	509	752	1	4	\$0 52.8	\$0 55	59,442	\$0 99.1	

MARION COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.							EMPLOYEES.						PRODUCT.							
			Drift, slope or shaft.....	Steam.	699 569	6 6	1 1	P. R.	*1	Fan.	No. of places of egress....	Ventilation, by fan, furnace or otherwise.....	Number of miners employed	No. of other employes in and about the mine	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time).....	Price per ton paid for mining.		No. of tons of coal produced.....	Average value of coal per ton at the mine.....	
																			Winter	Summer.....		Winter	Summer.....
Sandoval Coal Co..... Centralia M. & Mfg. Co.	Sandoval..... Centralia.....	\$25,000 35,000	Shaft.....	Steam.	699 569	6 6	1 1	P. R.	*1	Fan.	115 140	35 53	240 300	1,600 1,800	75,101 55,000	4	\$0 56 ³ / ₄ 62 ¹ / ₂	\$0 62 ¹ / ₂	\$0 97 1 00	75,101 55,000	130,101	\$0 98.2	
Totals.....		\$60,000									190	90	540	3,400									

* Sinking escapement.

PERRY COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.							
			Drift, slope or shaft.....	Steam, horse or hand-power	Depth of coal below the surface—feet.	Thickness of coal—feet and inches	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress.....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employ'd	No. of men injured (so as to lose time)	No. men killed during year	No. of kegs of powder used during the year.....	No. of days worked during the year	No. of other employes in and about mine.....	Price per ton paid for mining.	No. of tons of coal produced .....	Average value of coal per ton at the mine .....
										Winter	Summer							
Hill, Cent. Iron & Coal Co.	St. Johns.	\$50,000	Slope	Steam.	41	6	7	P. R.	3	Fur.	200	30	256	1,555	30	47½	103,683	\$1 00
Perry Co. Coal Min. Co.	St. Johns.	6,200	Shaft.	"	180	5-6	6	"	33	"	26	11	225	621	27	56¾	16,616	90
Enterprise Coal & Coke.	DuQuoin.	15,000	"	"	66	7	6	"	60	"	40	17	120	633	2	56¾	24,399	1 00
DuQuoin Coal Min. Co.	"	15,000	"	"	40	6	6	"	15	"	60	25	250	400	17	56¾	17,000	1 00
Star Coal Mining Co.	"	6,000	"	"	66	6	6	"	50	"	20	15	200	600	16	56¾	16,000	1 00
Frizzell Coal Min. Co.	"	3,400	"	"	30	6	6	"	8	Fan.	8	17	235	170	1	56¾	6,650	90
D. C. Barbour & Son.	Tamaroa	7,000	"	"	200	6	6	"	13	"	13	8	272	346	44	44	12,300	90
Tamaroa Coal Co.	"	8,000	"	"	200	6	6	"	25	Fur.	20	10	240	800	44	44	18,000	1 00
Richard Baile.	DuQuoin	500	"	Horse.	35	6	7	"	6	"	6	1	200	100	50	62½	3,000	90
J. H. Schulze.	Pinckneyville	600	"	Steam.	40	6	6	"	12	"	12	1	80	10	50	50	3,300	75
Malone & Miller.	"	400	"	Horse.	40	6	6	"	8	"	2	1	150	50	50	50	2,400	1 00
+ Beaucoup Mine.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1,245	1 00
Sun Coal & Coke C. No. 3	DuQuoin	10,000	Shaft.	Steam.	80	5-6	6	P. R.	2	Fan.	58	30	300	800	3	56¾	26,182	90
Jones & Macklin	"	500	"	Horse.	47	6	7	"	3	"	6	10	50	50	62½	56¾	10,000	1 15
Gallum Mine.	Pinckneyville	2,000	"	Steam.	71	6	6	"	6	"	6	1	120	15	37½	56¾	2,250	60
Totals.		\$124,600									440	562	2,808	6,173	106	54.8	259,375	\$9 97.9

* Paid by box containing 1,666 pounds.

+ Abandoned.

: An escapement down to the rock over the coal.

§ Postoffice, DuQuoin.

RANDOLPH COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	CHARACTER OF PLANT.										EMPLOYES.				PRODUCT.			
		Capital employed.	Shaft.	Steam.	620	6	5	P. R.	No. of places of egress.	Ventilation, by fan, furnace or otherwise?	Number of miners employed	No. of other employes in and about mine.	No. of days worked during the year.	No. of kegs of powder used during year.	No. men killed during year.	No. of men injured (so as to losetime).	Price per ton paid for mining.	No. of tons of coal produced.	Average value of coal per ton at the mine.
				Horse.	100	5½	5	..	Fan.	15	6	300	450	..	..	..	\$0 37½	13,200	\$1 00
Jones & Neshit	Coulterville.	\$20,000	..	..	80	6	5	..	Fur.	15	10	185	600	..	..	..	50½	15,053	1 00
Barnard Coal Co.	Percy.	67,000	..	Horse.	100	6	6	..	..	20	13	200	104	..	..	..	62½	4,053	1 00
Wm. Goalby & Sons	..	4,500	..	..	90	6	6	..	Fur.	6	6	215	145	..	1	..	50	7,334	1 00
D. B. Boyd	Sparta.	3,000	..	..	25	6	6	..	..	12	25	275	400	..	..	..	37½	12,000	75
R. H. Roseborough	..	5,000	..	Stream.	25	5	5	..	..	15	21	210	125	..	..	..	50	3,000	87½
R. H. Roseborough & Moffat.	.. or Percy	3,000	..	Horse.	30	4½	3	..	..	6	6	216	30	..	1	..	62½	2,592	1 57½
J. T. Weir	..	400	Slope	..	30	4½	3	..	..	1	1	232	15	..	..	..	56½	562	1 25
Stanway & Morris.	..	400	..	Mar.	10	4½	3	..	..	1	1	125	10	..	..	..	62½	1,200	1 25
J. E. Dobyns	Blair.	300	Shaft.	Horse.	30	5½	3	..	..	1	1	100	15	..	..	..	62½	1,500	1 25
J. A. Wilson & Sons.	Sparta	300	..	..	30	5½	3	..	..	3	1	50	19	..	..	..	62½	1,600	1 00
T. A. Dobbins	..	800	..	..	160	6	6	..	..	..	..	..	..	..	..	..	..	..	..
Totals		\$104,900								80	37	2,098	1,904	1	2	\$0 45 7	\$0 49.9	61,124	\$0 91.2

* Sinking escapement. † Abandoned.

† Abandoned.

SALINE COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.				EMPLOYES.				PRODUCT.							
			Drift, slope or shaft.....	Steam, horse or hand-power	Thickness of coal—feet and inches	Geological No. of seam	Long-wall, or pillar and room workings	No. of places of egress.	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed	No. of other employees, in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time)	Price per ton paid for mining.	No. of tons of coal produced	Average value of coal per ton at the mine.....
									Winter.....	Summer.....								
Equality Coal Co.	Equality.....	\$25,000	Slope	Mule	40-4-10	5	P. R.	2	75	20	256	820	..	..	\$0 62½	\$0 75	22,280	\$1 00
Howell & Roberts.....	Harrisburg	20,000	Shaft.....	Horse.....	40-4-6	5	..	2	40	40	186	227	..	..	75	87½	27,325	1 20
John Davenport & Co.	..	2,500	Slope	..	25-5-6	5	..	2	10	4	150	136	1	..	75	87½	8,000	1 15
Eldorado Coal Co.	Eldorado	3,000	Slope	Steam.....	25-4-8	5	..	2	6	15	125	35	..	..	62½	75	2,515	1 00
Mason & Allsop	Stonefort.....	3,500	Shaft.....	Horse.....	40-3-6	3	..	2	15	25	248	113	1	..	81¼	93¾	9,920	1 25
*Wiley Cox	New Burn's	173	Drift.....	Man.....	15-2-4	3	..	2	..	4	100	25	..	..	..	87½	1,200	1 20
Illinois Iron & Coal Co., Leasford	Harrisburg	12,000	Slope	Mule	35-4-6	5	..	2	45	70	201	265	..	3	75	87½	23,556	1 25
Illinois Iron & Coal Co., Bald Knob	..	8,000	Shaft.....	Steam.....	60-4	5	..	2	45	60	120	300	..	1	75	87½	14,150	1 25
J. Donahoe	Equality.....	150	Drift.....	Man.....	30-4-6	6	P. R.	2	1	3	220	14	..	..	75	87½	850	1 50
Other strippers in Co.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	600	..
Totals	..	\$73,325	..	..	..	..	..	..	182	302	1,606	1,925	1	5	\$0 72.7	\$0 85.2	110,396	\$1 17

* Abandoned.

ST. CLAIR COUNTY—1885.

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Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.										EMPLOYES.						PRODUCT.									
			Drift, slope or shaft.....	Shaft.	Steam.	97 140	6 7	6 6	6 6	6 6	6 6	P-R.	3 Fan. 2	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed		No. of other employees in and about mine.	No. of days worked during the year	No. of kegs of powder used during the year.....	No. men killed during year	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.				
															Summer	Winter												
Abbey Coal Co. No. 1.....	Collinsville ..	\$32,000	..	..	..	130	6-6	6	6	6	6	6	6	2 Fan.	3	..	15 78	35 78	8	200	225 771	..	..	\$0 37½	\$0 60	22,213 88,641	\$0 87½ 87½	
Gartside Coal Co. Cross Roads	Ridge Prairie ..	25,000	..	..	..	135	6-6	6	6	6	6	6	6	Fur.	2	..	27 79	16 26	4	246	..	..	..	..	..	..	11,811	87½
Gartside Coal Co., Mentor	..		..	..	..	150	6-6	6	6	6	6	6	6	6	..	2	..	25 9	27 5	13	240	150	..	..	..	..	26,278	87½
Dutch Hollow Coal Co. Richland	Belleville.....		..	..	..	179	6-6	6	6	6	6	6	6	6	..	2	..	25 13	25 375	13	250	375	..	..	..	..	9,000	87½
Dutch Hollow, Emmet mine	Belleville.....	33,000	..	..	..	140	6-6	6	6	6	6	6	6	..	2	..	20 18	192 90	3	192	90	..	..	..	..	..	40,000	87½
Dutch Hollow mine.....	Birkner	1,000	..	..	..	134	6-6	6	6	6	6	6	6	..	2	..	8 12	8 175	3	250	175	..	..	..	..	..	9,600	75
Gartside Coal Co. No. 3.....	W. Belleville	7,000	..	..	..	134	6-6	6	6	6	6	6	6	..	2	..	40 8	40 26	16	253	800	..	..	..	..	..	7,560	75
Green Mound Coal Co.	Belleville.....	4,000	..	..	..	130	7-6	6	6	6	6	6	6	2 Fan.	2	..	26	26	6	270	800	2	..	..	..	65,055	75	
Pittsburgh Mining Co.	Belleville.....	50,000	..	..	..	90	5-6	6	6	6	6	6	6	2 Fan.	2	..	24	24	5	269	159	1	..	..	..	18,653	60	
Conrad Kenicke, No. 1	..	8,000	..	..	..	56	7-6	6	6	6	6	6	6	..	2	..	20	20	3	234	12	..	..	..	..	13,104	1 25	
Conrad Kenicke, No. 2	..	25,000	..	..	..	120	8-6	6	6	6	6	6	6	..	2	..	16	16	3	270	115	..	..	..	..	12,630	1 00	
Standard Coal Co., Summit mine	..	6,000	..	..	..	150	6-6	6	6	6	6	6	6	..	2	..	28	28	13	33	187	30	..	..	..	60,000	70	
Main Guy Mine, J. Maule	W. Belleville.....	30,000	..	..	..	90	6-6	6	6	6	6	6	6	2 Fan.	2	..	8	8	1	200	36	..	..	..	..	3,807	1 15	
Enterprise C. Mining Co	Yock Bros	2,500	..	..	..	110	6	6	6	6	6	6	6	..	2	..	4	4	3	187	100	..	..	..	..	7,000	75	
Poynton Mine	..	1,500	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
George Reuther.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Welch Mining Co., Excelsior Mine	Birkner Sta.....	6,000	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Welsh Mining Co., Vic-	tor Mine.....	Wildern St.	18,000	Shaft.	Steam.	110	6	6	P.R.	2	Fur.	*15	*25	3	187	400	2	.....	.....	12,000	75
A. Brandenberger & Co.	W. Belleville	14,000	..	..	..	90	7	6	..	2	..	*15	*20	12	250	180	1	.....	.....	21,145	70
Schumann Bros	W. Belleville	20,000	..	..	..	150	6	6	..	2	..	*30	*30	15	252	200	2	.....	.....	33,700	70
Birkner	W. Belleville	45,000	..	..	..	130	6	6	..	2	..	*35	*40	14	252	200	1	.....	.....	44,320	75
John Kloess	W. Belleville	6,000	..	..	..	120	6-6	6	..	2	Fan.	..	..	..	..	..	1	.....	.....	68,040	75
White Oak Coal Co.	Marissa	15,000	..	..	..	110	6	6	..	2	..	15	25	3	125	97	1	.....	.....	26,320	75
Daniels & Marsh	W. Belleville	5,600	..	..	..	120	6-7	6	..	2	..	20	20	3	125	97	1	.....	.....	20,570	62½
E. J. Brugemann	Belleville	5,000	..	..	..	135	6	6	..	2	Fur.	..	..	..	..	..	1	.....	.....	5,286	56
Concordia Mining Co.	..	5,000	..	..	..	87	6-6	6	..	2	..	8	14	4	250	24	..	.....	.....	7,141	87½
G. B. Grawlows	..	1,800	..	..	..	40	6	6	..	2	..	11	11	2	260	8	..	.....	.....	30	30
W. Lloyd & Sons	Rentchier Sta	4,600	..	..	..	60	6-6	6	..	2	..	3	10	3	293	40	..	.....	.....	5,513	43½
Millstadt Coal Co.	Millstadt	10,000	..	..	..	120	6	6	..	2	..	15	20	4	250	100	..	.....	.....	14,100	75
St. L. & H. Prairie C. Co.	..	6,000	..	..	..	114	6-6	6	..	2	..	12	20	2	145	75	1	.....	.....	50	50
Freibaum & Muskopf	..	5,400	..	..	..	42	6	6	..	2	..	6	5	1	200	5	..	.....	.....	7,515	62½
Millstadt Union Coal Co	..	3,300	..	..	..	40	5-6	6	..	2	..	14	30	2	250	..	2	.....	.....	2,010	75
Ben Johnson	Smithton	8,000	..	..	..	45	6	6	..	2	..	2	3	2	200	..	..	.....	.....	6,777	150
Adam Ogden & Sons	Rentchier	8,000	..	..	..	125	6	6	..	2	..	16	16	3	216	251	..	.....	.....	11,252	75
Stewart & Jacks, M. M.	Lebanon	9,000	..	..	..	180	4-10	6	..	2	..	16	24	6	250	200	1	.....	.....	10,000	87
Kirtling Bros. Vancort	O'Fallon	4,400	..	..	..	135	5-6	6	..	2	..	..	12	4	54	7	..	.....	.....	613	70
Conrad Straunberger	French Village	1,500	..	..	..	100	8-6	6	..	2	..	..	..	..	..	..	..	.....	.....	40	100
James H. Harelton	Freeburgh	6,000	..	..	..	140	7-6	6	..	2	..	18	22	4	280	200	..	.....	.....	10,730	62½
Jos. Reihart	Belleville	12,000	..	..	..	125	7-6	6	..	2	Fan.	24	28	6	100	218	..	.....	.....	8,250	62½
Knohs Bros	W. Belleville	6,000	..	..	..	35	6	6	..	2	St'm	8	10	2	198	..	..	.....	.....	7,400	62½
Roschill Mining Co.	Belleville	6,000	..	..	..	130	6-6	6	..	2	Fur.	15	15	4	208	210	1	.....	.....	23,269	62½
Humboldt Mining Co.	Belleville	4,000	..	..	..	108	6	6	..	2	Fan.	8	14	2	225	50	..	.....	.....	2,500	60
Harding, Emery & Co. No.2	Belleville	3,500	..	..	..	130	6-6	6	..	2	..	60	70	8	220	20	..	.....	.....	18,000	60
Wm. Brandenberger	..	7,000	..	..	..	65	6	6	..	2	..	30	30	4	200	70	..	.....	.....	28,000	56
Marissa Coal Co.	..	4,500	..	..	..	110	6-6	6	..	2	..	18	18	6	251	500	1	.....	.....	20,167	56½
Harris Bros. Harmny	Belleville	6,000	..	..	..	120	6	6	..	2	Fan.	35	50	6	185	100	..	.....	.....	21,040	75
Heinrich Bros	Heinrichtown	10,000	..	..	..	100	7-6	6	..	2	..	..	..	..	..	..	..	.....	.....	36,700	80
St. Libory	St. Libory	300	..	..	..	183	7-6	6	..	2	..	20	25	9	310	600	..	.....	.....	18,953	100
H. J. Heinicke	Lebanon	6,000	..	..	..	200	6-6	6	..	2	Fur.	40	50	4	215	216	..	.....	.....	94,000	100
Joseph Taylor	Lebanon	6,500	..	..	..	189	5-6	6	..	2	E. S.	30	40	7	208	310	..	.....	.....	24,560	75
Lebanon Coal Co.	Lebanon	7,000	..	..	..	172	6	6	..	2	Fan.	24	28	4	265	150	..	.....	.....	2,750	75
North West'n Coal M.C.	W. Belleville	3,000	..	..	..	50	6	6	..	2	St'm.	4	6	2	275	12	..	.....	.....	1,220	80
Wm. Ebell & Co.	Belleville	2,000	..	..	..	55	6	6	..	2	..	2	2	2	195	10	..	.....	.....	800	75
John Haust	..	600	..	..	..	45	6	6	..	2	..	..	..	..	..	..	..	.....	.....	1,200	80
Jacob Lull	..	600	..	..	..	45	6	6	..	2	..	..	..	..	..	..	..	.....	.....	1,480	80
Dudley mine	..	5,000	..	..	..	110	6	6	..	2	Fur.	25	3	1	200	25	1	.....	.....	1,480	80
Eriz Winzer	..	300	..	..	..	55	6-6	6	..	2	..	2	5	1	190	80	..	.....	.....	43	43
S. Kronberger	..	400	..	..	..	60	6	6	..	2	..	..	..	..	..	..	..	.....	.....	43	43
Wm. Rubble & Co.	..	2,500	..	..	..	100	6	6	..	2	..	5	..	2	200	80	..	.....	.....	50	50
Lawrence Faber	French Vill.	100	..	..	..	90	7	6	..	2	Fur.	..	..	..	..	..	..	.....	.....	8,450	125
Jeremiah Bennett	Lebanon	14,000	..	..	..	180	5-6	6	..	2	..	1	..	1	130	170	..	.....	.....	50	50
George Grossman	Smithton	100	..	..	..	20	5-6	6	..	2	Fur.	17	17	1	160	160	1	.....	.....	8,400	125

St. Clair County—Continued.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.										EMPLOYES.						PRODUCT.		
			Drift, slope or shaft.....		Steam, horse or hand-power.....	Depth of coal below the surface—feet.....	Thickness of coal—feet and inches.....	Geological No. of seam....	Long-wall, or pillar and room workings.....	No. of places of egress....	Ventilation, by fan, furnace or otherwise?.....	Number of miners employed		No. of other employes in and about mine.....	No. of days worked during the year.....	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.		No. of tons of coal produced.....	Average value of coal per ton at the mine.....
											Winter	Summer.....						Winter	Summer.....		
Summerfield Coal Co	Summerfield.	\$12,000	Shaft.	Steam.	280	4	6	P-R..	b	St'm.	20	8	8	120	240	—	—	\$0 50	\$0 50	4,230	\$1 00
Brostus & Co.	Belleville.	3,000	"	"	65	6-6	6	"	2	Fur.	8	8	3	160	140	—	—	50	50	6,000	1 00
Randall & Co.	Birkner.	6,500	"	"	135	7	6	"	2	Fan.	12	12	3	240	60	—	—	37½	37½	12,500	75
Union M. Co.	Belleville.	13,000	"	"	101	6	6	"	2	Fur.	12	12	3	200	20	—	—	37½	37½	5,760	75
Johnson Coal Co.	W. Belleville.	5,000	"	"	120	6	6	"	2	"	14	14	3	180	20	—	—	37½	37½	9,000	60
J. Beatty.	Mascoutah.	5,000	"	"	160	6	6	"	2	St'm.	8	8	3	130	30	—	—	50	50	3,400	1 50
Other small mines																				3,000	
Totals.....		\$669,200									1,210	1,514	388	14,944	10,394	2	24	\$0 41.1	\$0 47.1	1,202,549	\$0 79.2

* None employed as miners.

† Paid by day.

‡ Men paid by box.

§ Sinking escapement.

a Out of the business now, succeeded by Devoy & Fenerborn, 720 Pine street, St. Louis.

b Will sink escapement shaft or abandon the mine.

WILLIAMSON COUNTY—1885.

Name of firm, company or individual operating mine.	Town or post-office nearest the mine.	Capital employed.	CHARACTER OF PLANT.										EMPLOYES.						PRODUCT.		
			Drift, slope or shaft.....	Steam, horse or hand-power.....	60	9-6	7	P-R..	2	Fur..	100	100	40	250	No. of kegs of powder used during the year.....	No. men killed during year.....	No. of men injured (so as to lose time).....	Price per ton paid for mining.	No. of tons of coal produced.....	Average value of coal per ton at the mine.....	
				Shaft. Steam.	60	9-6	7	P-R..	2	Fur..	100	100	40	250	900	..	2	*\$0 40	58,966	\$1 00	
		} \$60,000 600 300 \$60,900		Slope	60	9-6	7	"	2	"	8	5	23	100	40	..	1	*40	4,821	1 00	
				600 Drift.	Horse.	20	6	5	"	1	"	2	3	200	10	..	..	60	1,600	1 15	
				300 Shaft.	"	17	9-6	7	"	2	"	2	3	1	200	20	..	..	50	1,821	1 00
																				9,000	1 00
											112	108	46	750	970	..	3	\$0 50	76,208	\$1 00	
	</																				

* Men paid by the box.

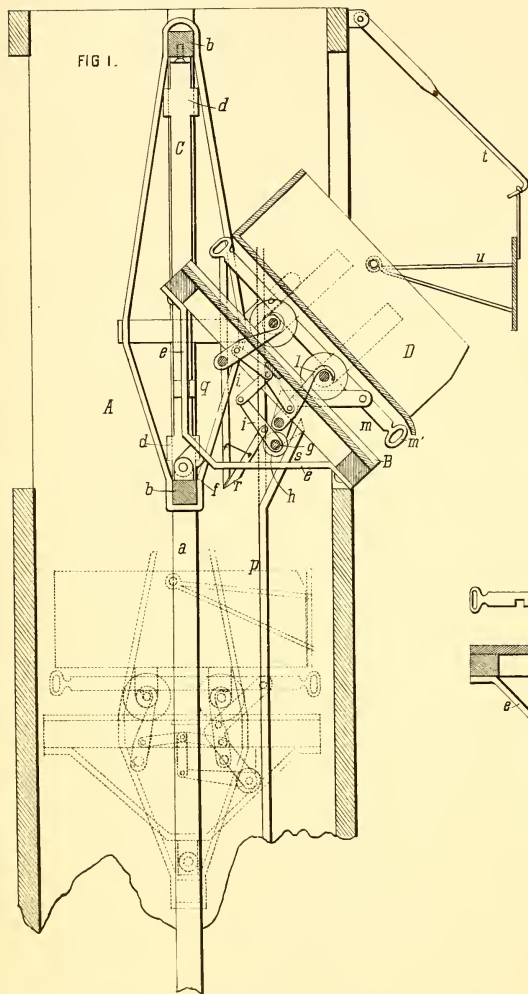
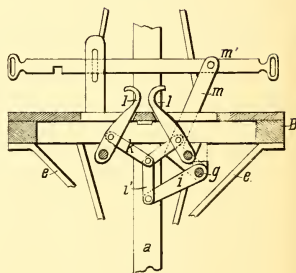


FIG. 2.



✱ ELEVATING AND DUMPING APPARATUS ✱

PATENTED OCT. 1884 BY B. K. PRATER, M^r OLIVE, ILLS.

PRATER'S ELEVATING AND DUMPING APPARATUS.

This apparatus is intended especially for use at mining shafts for elevating and discharging coal and other materials, the object being to save the handling of the pit cars at the top of the shaft.

The elevator platform is constructed to be raised and lowered, and is also hung so that it may be swung to one side at the top of the shaft. Devices are provided for holding the car or box on the platform, so that when the latter is tipped the load will be emptied. These operations are affected automatically, and the parts are so arranged that the platform can also be raised without being tipped when it is desired to use it in that manner.

The operation of the apparatus is as follows: The platform B being lowered to the bottom of the shaft, a car or box D is run upon it, and the slide-rod m' is moved to lock the hooks l with the car axles. The platform is then hoisted to the top of the shaft. On reaching the gate r the rollers h are caused to move to one side, thus swinging the platform, and with it the car, into position for dumping the load. At the moment the car is tipped the hook t , hung in position above the car, engages a loop, on the pivoted tail board u of the car, so that as the platform turns, the board u is held up to allow the coal or other material to run out.

When the elevator is used for raising men and material, the gate r is turned down to its vertical position and the rollers h will then pass between the guides p q , and the platform will not be tipped.

THE
MINING LAWS OF ILLINOIS

AS AMENDED BY THE

XXXIV GENERAL ASSEMBLY

1885.

EXTRACT FROM THE CONSTITUTION OF ILLINOIS.

ARTICLE IV.

SECTION 29.

“It shall be the duty of the General Assembly to pass such laws as may be necessary for the protection of operative miners, by providing for ventilation when the same may be required, and the construction of escapement shafts, or such other appliances as may secure safety in all coal mines, and to provide for the enforcement of said laws, by such penalties and punishments as may be deemed proper.”

AN ACT

PROVIDING FOR THE HEALTH AND SAFETY OF PERSONS EMPLOYED IN COAL MINES.

Approved May 28, 1879, in force July 1, 1879; as amended by acts approved June 18, 1883, and June 21, 1883; in force July 1, 1883; and as amended by an act approved June 30, 1885, in force July 1, 1885.

(The amendments of 1885 appear in italic.)

SECTION 1. *Be it enacted by the people of the State of Illinois represented in the General Assembly:* That the owner, or agent, or operator of each and every coal mine in this State shall make or cause to be made, at the discretion of the inspector, or person acting in that capacity, an accurate map or plan of the workings of such coal mine, and of each and every vein thereof, showing the general inclination of the strata, together with any material deflections in the said workings, and the boundary lines of said coal mines, and deposit a true copy of said map or plan with the inspector of coal mines, to be filed in his office, and another true copy of said map or plan with the recorder of the county in which said coal mine is situated, to be filed in his office, both of which said copies shall be deposited as aforesaid within three (3) months from the day when this act shall go into effect; and the original, or a copy of such map or plan, shall also be kept for inspection at the office of such coal mine; and during the month of January, of each and every year after this act shall go into effect, the said owner, agent or operator, shall furnish the inspector and recorder, as aforesaid, with a statement and further map or plan of the progress of the workings of such coal mine, continued from the last report to the end of the December month just preceding; and the inspector shall correct his map or plan of said workings in accordance with the statement and map or plan thus furnished; and when any coal mine is worked out or abandoned, that fact shall be reported to the inspector, and the map or plan of such coal mine in the office of said inspector shall be carefully corrected and

Survey and map of mines to be made and filed with county recorder and Bureau of Labor Statistics.

verified. The several coal mine inspectors in this State shall furnish copies of all maps or plans of mines, to be filed with the Bureau of Labor Statistics. [As amended by an act approved June 18, 1883.]

§ 2. Whenever the owner, agent or operator of any coal mine shall neglect or refuse to furnish the said inspector and recorder, as aforesaid, with the statement, the map or plan, or addition thereto, as provided for in the first section of this act, at the times and in the manner therein provided, the said inspector is hereby authorized to cause an accurate map or plan of the workings of such coal mine to be made at the expense of said owner, agent or operator, and the cost thereof may be recovered by law from said owner, agent or operator, in the same manner as other debts, by suit in the name of the inspector and for his use.

Escapement shaft or other place of egress must be opened.

§ 3. In all coal mines that are or have been in operation prior to the first day of July, in the year of our Lord 1879, and which are worked by or through a shaft, slope or drift, if there is not already an escapement shaft to each and every said coal mine, or communication between each and every coal mine, and some other contiguous mine, then there shall be an escapement shaft or other communication, such as shall be approved by the mine inspector, making at least two distinct means of ingress and egress for all persons employed or permitted to work in such coal mine. Such escapement shaft or other communication with a contiguous mine, as aforesaid, shall be constructed in connection with every vein or stratum of coal worked in such coal mine, which shall be at least three and one-half feet high and at least five feet wide, and in no instance shall the height of said roadway be less than the thickness of the vein or stratum of coal through which it is driven; and the time to be allowed for such construction shall be one year when such mine is under one hundred (100) feet in depth; two years when such mine is over one hundred (100) feet in depth and under three hundred (300) feet, and three years when it is over three hundred (300) feet and under four hundred (400) feet, and four years when it is over four hundred (400) feet in depth, and five years for all mines over five hundred (500) feet, from the first day of July, A. D. 1879; and in all cases where the working face of one mine has been driven up to or into the workings of another mine, the respective owners of such mines, while operating the same, shall keep open a roadway at least five feet high and five feet wide, thereby forming a communication, as contemplated in this act; and for a failure to do so shall be subject to the penalty provided for in section 10 of this act, for each and every day such roadway is unnecessarily closed; each and every such escapement shaft shall be separated from the main shaft by such extent of natural strata as shall secure safety to the men employed in

Time allowed for the construction of escapement shafts for mines open'd prior to July, 1879.

Communication with contiguous mines.

such mines such distance to be left to the discretion of the mine inspector or person acting in that capacity, and shall be equipped with stairways or ladders, having landing places or platforms at least every twenty feet from the bottom to the top, or in lieu thereof such hoisting apparatus as will enable the employes in the mine to make safe and speedy exit in case of danger. Equipment of escape-ment shafts.

In all coal mines that shall go into operation for the first time after the first day of January, A. D. 1880, and in all cases where such mine or mines shall hereafter be put in operation in this State, the owner thereof or the lessee or occupant of the same, shall construct such an escapement shaft as is now required by law in this State at the rate of two hundred feet per annum until such escapement shaft shall have been fully completed: *Provided*, that nothing in this section shall be construed to extend the time heretofore allowed by law for constructing escapement shafts in mines going into operation for the first time before said first day of January, A. D. 1880: *And, provided, further, that when two or more coal mines are so located as to allow the said mines to be connected by permanent entries between, and the land or mining rights lying between such mines is owned by any person or persons with whom the owner or owners of said mine or mines are unable to agree for the purchase of the right of way for the connecting entry or entries between such mines, and the right to maintain and use such entry as a connecting entry, such owner or owners of any such coal mine or mines, or either of them, may acquire such right or title in the manner that may be now or hereafter provided for by any law of eminent domain.* [As amended by an act approved June 18, 1883, and by an act approved June 30, 1885, and in force July 1, 1885.] Time allowed for mines opened since 1879.

§ 4. The owner, agent or operator of every coal mine, whether operated by shaft, slope or drift, shall provide and maintain for every such mine a good and sufficient amount of ventilation for such men and animals as may be employed therein, the amount of air in circulation to be in no case less than one hundred cubic feet for each man, and six hundred cubic feet for each animal, per minute, measured at the foot of the downcast, and the same to be increased at the discretion of the inspector according to the character and extent of the workings, or the amount of powder used in blasting; and said volume of air shall be forced and circulated to the face of every working place throughout the mine, so that said mine shall be free from standing powder smoke and gases of every kind. In all mines where fire-damp is generated, every working place where the same is known or thought to exist shall be examined every morning with a safety lamp, by a competent person, before any other persons are allowed to enter; and wherever the inspector shall find men working without sufficient air, or under any unsafe conditions, he may remove the same to other parts of the mine, or from the mine alto- Right of way for underground connections.

Amount of ventilation required.

Removal of men from dangerous workings.

gether. The ventilation required by this section may be produced by any suitable appliances, but in case a furnace shall be used for ventilating purposes, it shall be built in such a manner as to prevent the communication of fire to any part of the works, by lining the up-cast with incombustible material for a sufficient distance up from said furnace: *Provided*, it shall not be lawful to use a furnace for ventilating purposes, or for any other purpose, that shall emit smoke into any compartment constructed in, or adjoining, any coal hoisting shaft or slope where the hoisting shaft or slope is the only means provided for the ingress or egress of persons employed in said coal mines. That it shall be unlawful, where there is but one means of ingress and egress provided at a coal shaft or slope, to construct and use a ventilating furnace that shall emit smoke into a shaft, as an up-cast, where the shaft or slope used as a means of ingress and egress by persons employed in said coal mines is the only means provided for furnishing air to persons employed therein. [As amended by an act approved June 21, 1883, and by an act approved June 30, 1885, in force July 1, 1885.]

Bore-holes. § 5. The owner, agent or operator shall provide that bore-holes shall be kept twenty feet in advance of the face of each and every working place, and if necessary, on both sides, when driving towards an abandoned mine or part of a mine suspected to contain inflammable gases, or to be inundated with water.

Signals. § 6. The owner, agent or operator of every coal mine operated by shaft shall provide suitable means of signaling between the bottom and top thereof, and shall also provide safe means of hoisting and lowering persons in a cage covered with boiler iron, so as to keep safe, as far as possible, persons descending into and ascending out of such shaft; and such cage shall be furnished with guides to conduct it on slides through such shaft, with a sufficient brake on every drum to prevent accident in case of the giving out or breaking of the machinery; and such cage shall be furnished with spring catches intended and provided, as far as possible, to prevent the consequences of cable-breaking or the loosening or disconnecting of the machinery; and no props or rails shall be lowered in a cage while men are descending into or ascending out of said mine: *Provided*, that the provisions of this section in relation to covering cages with boiler iron shall not apply to coal mines less than one hundred (100) feet in

Women and children not permitted to work in mines. depth, where the coal is raised by horse-power. No person under the age of fourteen years, or females of any age, shall be permitted to enter any mine to work therein. Any party or person neglecting or refusing to perform the duties required to be performed by sections three (3), four (4), five (5), six (6), seven (7) and eight (8), shall be deemed guilty of a misdemeanor, and punished by fine in the discretion of the court trying the

Penalties.

same, subject, however, to the limitations as provided by section ten of this act. [As amended by an act approved June 18, 1883.]

§ 7. No owner, agent or operator of any coal mine operated by shaft or slope shall place in charge of any engine whereby men are lowered into or hoisted out of the mines, any but an experienced, competent and sober person not under the age of eighteen years; and no person shall ride upon a loaded cage or wagon used for hoisting purposes in any shaft or slope, and in no case shall more than twelve persons ride on any cage or car at one time, nor shall any coal be hoisted out of any coal mine while persons are descending into such coal mine; and the number of persons to ascend out of or descend into any coal mine on one cage shall be determined by the inspector; the maximum number so fixed shall not be less than four, nor more than twelve, nor shall be lowered or hoisted more rapidly than six hundred feet to the minute.

Character of
engineer.

How and
when per-
sons may use
cages.

§ 8. All boilers used in generating steam in and about coal mines shall be kept in good order, and the agent, owner or operator, as aforesaid, shall have said boilers examined and inspected by a competent boilermaker, or other qualified person, as often as once every six months, and oftener if the inspector shall deem it necessary, and the result of every such examination shall be certified, in writing, to the mine inspector; and the top of each and every shaft, and the entrance to each and every intermediate working vein shall be securely fenced by gates properly covering and protecting such shaft and entrance thereto; and the entrance to every abandoned slope, air or other shaft shall be securely fenced off; and every steam boiler shall be provided with a proper steam gauge water gauge and safety valve; and all underground, self-acting or engine planes, or gangways, on which coal cars are drawn and persons travel, shall be provided with some proper means of signaling between the stopping places and the end of said planes or gangways, and sufficient places of refuge at the sides of such planes or gangways shall be provided at intervals of not more than twenty feet apart.

Boilers to be
examined.

Shafts to be
fenced.

Places of
refuge.

§ 9. Whenever loss of life, or serious personal injury shall occur by reason of any explosion, or of any accident whatsoever, in or about any coal mine, it shall be the duty of the person having charge of such coal mine to report the facts thereof, without delay, to the mine inspector of the district in which said coal mine is situated; and if any person is killed thereby, to notify the coroner of the county also, or, in his absence or inability to act, any justice of the peace of said county; and the said inspector shall, if he deem it necessary from the facts reported, immediately go to the scene of said accident and make such suggestions and render such assistance

Accidents
must be re-
ported to
mine inspec-
tor.

as he may deem necessary for the safety of the men. And the inspector shall investigate and ascertain the cause of such explosion or accident, and make a report thereof, which he shall preserve with the other records of his office; and to enable him to make such investigations he shall have the power to compel the attendance of witnesses, and administer oaths or affirmations to them, and the cost of such investigations shall be paid by the county in which such accident has occurred, in the same manner as costs of coroners' inquests are now paid. And the failure of the person in charge of the coal mine in which any such accident may have occurred, to give notice to the inspector or coroner, as provided for in this section, shall subject such person to a fine of not less than twenty-five dollars (\$25), nor more than one hundred dollars (\$100), to be recovered in the name of the People of the State of Illinois, before any justice of the peace of such county, and such fine, when collected, shall be paid into the county treasury for the use of the county in which any such accident may have occurred. [As amended by an act approved June 18, 1883.]

§ 10. In all cases in which punishment is provided by law under this act for a breach of any of its provisions, the fine for a first offence shall not be less than fifty dollars (\$50), and not more than two hundred dollars (\$200), and for the second offense not less than one hundred dollars (\$100) or more than five hundred dollars (\$500), in the discretion of the court, except as specially provided for in section nine of this act.

§ 11. This State shall be divided into five inspection districts, as follows, viz: The first district shall be composed of the counties of Boone, McHenry, Lake, DeKalb, Kane, DuPage, Cook, LaSalle, Kendall, Grundy, Will, Livingston, Kankakee and Iroquois. Second district, the counties of JoDaviess, Stephenson, Winnebago, Carroll, Ogle, Whiteside, Lee, Rock Island, Henry, Bureau, Mercer, Stark, Putnam, Marshall, Henderson, Warren, Knox, Hancock, McDonough, Schuyler, Adams and Brown. The third district, the counties of Fulton, Peoria, Woodford, Tazewell, McLean, Ford, Mason, Cass, Menard, Logan, DeWitt, Piatt, Champaign and Vermilion. The fourth district, the counties of Pike, Scott, Morgan, Sangamon, Calhoun, Greene, Jersey, Madison, Bond, Macoupin, Montgomery, Christian, Fayette, Macon, Moultrie, Shelby, Effingham, Douglas, Coles, Cumberland, Jasper, Edgar, Clark, Crawford, Clay, Richland and Lawrence. The fifth district, the counties of St. Clair, Clinton, Washington, Marion, Jefferson, Wayne, Edwards, Wabash, Hamilton, White, Monroe, Randolph, Perry, Jackson, Franklin, Williamson, Saline, Gallatin, Union, Johnson, Pope, Hardin, Alexander, Pulaski and Massac. The Governor shall, upon the recommendation of a board of examiners se-

lected for that purpose, composed of two practical coal miners, two coal operators, and one mining engineer, to be appointed by the Bureau of Labor Statistics of this State, all of whom shall be sworn to a faithful discharge of their duties, appoint five properly qualified persons to fill the offices of inspectors of coal mines of this State, (being one inspector for each district provided for in this act) whose commissions shall be for the term of *two years*, but they shall at all times be subject to removal from office for neglect of duty, or malfeasance in the discharge of duty, as hereinafter provided for; and the inspectors so appointed shall have attained the age of thirty years, be citizens of this State, and have a knowledge of mining engineering sufficient to conduct the development of coal mines, and a practical knowledge of the methods of conducting mining for coal in the presence of explosive gases, and of the proper ventilation of coal mines. They shall have had a practical mining experience of ten years, and shall not be interested as owner, operator, stockholder, superintendent or mining engineer of any coal mine during their term of office, and shall be of good moral character and temperate habits, and shall not be guilty of any act tending to the injury of miners or operators of mines during their term of office. They shall be provided by the State with the most approved modern instruments for carrying out the intention of this act. The inspectors, before assuming the duties of their several offices, shall take an oath of office, as provided for by the constitution, and shall be required to enter into a bond to the State in the sum of five thousand dollars (\$5,000), with sureties to be approved by the Governor, conditioned upon the faithful performance of their duties in every particular, as required by this act; said bond, with the approval of the Governor endorsed thereon, together with the oath of office, shall be deposited with the Secretary of State. The salaries of the inspectors provided for by this act shall be eighteen hundred dollars (\$1,800) per annum, each, and the Auditor of Public Accounts is hereby authorized to draw his warrant on the treasury in their favor, quarterly, for the amount specified in this section for the salary of each inspector: *Provided*, that the county board of any county may appoint an assistant inspector for such county, who shall act under the direction of the district inspector in the performance of his duties, and shall receive not less than three dollars (\$3), nor more than five dollars (\$5) per day, for the time actually employed, to be paid out of the county treasury; and he may be removed by such county board at any time. [As amended by an act approved June 18, 1883, and an act approved June 30, 1885, in force July 1, 1885.]

Appointment
of district in-
spectors.

Qualifica-
tions of in-
spectors.

Inspectors
to give bonds.

Salaries of
inspectors.

County in-
spectors.

§ 12. The inspectors provided for by this act shall devote their whole time and attention to the duties of their office, and make personal examination of every mine within their respective districts, and shall see that every necessary precaution is taken to insure the health and safety of the workmen employed in such mines, and that the provisions and requirements of the mining laws of this State are faithfully observed and obeyed and the penalties of the same enforced. They shall also make annual reports to the Bureau of Labor Statistics of their acts during the year in the discharge of their duties, with their recommendations as to legislation necessary on the subject of mining, and shall collect and tabulate upon blanks furnished by said Bureau all desired statistics of the mines and miners within their districts, to accompany said annual report; they shall also furnish such information as they may have obtained on this subject, when called for, to the State Geologist. Upon a petition signed by not less than three reputable coal operators, or ten coal miners, setting forth that any inspector of coal mines neglects his duties, or that he is incompetent, or that he is guilty of malfeasance in office, or guilty of any act tending to the injury of miners or operators of mines it may be lawful for the Bureau of Labor Statistics of this State to issue a citation to the said inspector to appear, at no less than fifteen days' notice on a day fixed, before them, when the said Bureau shall proceed to inquire into and investigate the allegations of the petitioners; and if the said Bureau find that the said inspector is neglectful of his duty, or that he is by reason of causes that existed before his appointment, or that have arisen since his appointment, incompetent to perform the duties of said office, or that he is guilty of malfeasance in office, or guilty of any act tending to the injury of miners or operators of mines, the said Bureau shall declare the office of inspector of the said district vacant, and a properly qualified person shall be appointed to fill the office in compliance with the provisions of this act; and the cost of said investigation by the said Bureau shall be borne by the removed inspector; but if the allegations of the petitioners are not sustained by the final decision of the said Bureau, the costs shall be paid by the petitioners.

The board of examiners provided for in section eleven of this act shall be appointed at the annual meeting of the Bureau of Labor Statistics, and shall hold their offices for *two years*. They shall meet *biennially* at the State capital on the *second* Monday in September in each year, and special meetings may be called at any time by the Bureau of Labor Statistics when the office of coal mine inspector becomes from any cause vacant. They shall receive as compensation the sum of three dollars (\$3) per day, each, for time actually employed in the duties of their office, and actual traveling expenses, to be verified

Duties of inspectors.

Removal of inspectors.

Board of examiners.

by affidavit: *Provided*, that in no case shall the per diem received by any member of said board exceed the sum of thirty dollars (\$30) per annum. The Auditor of Public Accounts is hereby authorized to draw his warrant in favor of each member of the board of examiners at the close of their annual session, for the full amount due them for attending annual and special sessions, and expenses, upon vouchers sworn to by them and approved by the Secretary of the Bureau of Labor Statistics, and the Governor. [As amended by an act approved June 18, 1883, and an act approved June 30, 1885, in force July 1, 1885.]

§ 13. It shall be lawful for the inspector provided for in this act, to enter, examine and inspect any and all coal mines and machinery belonging thereto, at all reasonable times, by day or by night, but so as not to obstruct or hinder the necessary workings of such coal mine, and the owner, agent or operator of every such coal mine is hereby required to furnish all necessary facilities for entering for such examination and inspection, and if the said owner, agent or operator aforesaid shall refuse to permit such inspection or to furnish the necessary facilities for such entry, examination and inspection, the inspector shall file his affidavit setting forth such refusal with the judge of the circuit court in said county in which said mine is situated, either in term time or vacation, or, in the absence of said judge, with the master in chancery in said county in which said mine is situated, and obtain an order on such owner, agent or operator so refusing as aforesaid, commanding him to permit and furnish such necessary facilities for the inspection of such coal mine, or to be adjudged to stand in contempt of court and punished accordingly; and if the said inspector shall, after examination of any coal mine and the works and machinery pertaining thereto, find the same to be worked contrary to the provisions of this act, or unsafe for the workmen therein employed, said inspector shall, through the State's attorney of his county, or any attorney, in case of his refusal to act, acting in the name and on behalf of the State, proceed against the owner, agent or operator of such coal mine by injunction without bond, after giving at least two days' notice to such owner, agent or operator; and said owner, agent or operator shall have the right to appear before the judge or master to whom the application is made, who shall hear the same on affidavits, and such other testimony as may be offered in support as well as in opposition thereto; and if sufficient cause appear, the court, or judge in vacation, by order, shall prohibit the further working of any such coal mine in which persons may be unsafely employed contrary to the provisions of this act, until the same shall have been made safe and the requirements of this act shall have been complied with, and the court shall award such costs

Authority
of inspector.

Method
of procedure
against own-
er or opera-
tor.

in the matter of the said injunction as may be just; but any such proceedings so commenced shall be without prejudice to any other remedy permitted by law for enforcing the provisions of this act.

Remedies
for injuries
received.

§ 14. For any injury to person or property, occasioned by any willful violations of this act or willful failure to comply with any of its provisions, a right of action shall accrue to the party injured for any direct damages sustained thereby; and in case of loss of life by reason of such willful violation or willful failure as aforesaid, a right of action shall accrue to the widow of the person so killed, his lineal heirs or adopted children, or to any other person or persons who were, before such loss of life, dependent for support on the person or persons so killed, for a like recovery of damages for the injuries sustained by reason of such loss of life or lives.

Penalties
for misde-
meanors of
miners.

§ 15. Any miner, workman or other person who shall knowingly injure any water-gauge, barometer, air-course or brattice, or shall obstruct, throw open any air-ways, or carry any lighted lamps or matches into places that are worked by the light of safety lamps, or shall handle or disturb any part of the machinery of the hoisting engine, or open a door in the mine and not have the same closed again, whereby danger is produced either to the mine or those at work therein; or who shall enter into any part of the mine against caution; or who shall disobey any order given in pursuance of this act; or who shall do any willful act whereby the lives and health of persons working in the mine, or the security of the mine or mines, or the machinery thereof, is endangered, shall be deemed guilty of a misdemeanor, and, upon conviction, shall be punished by fine or imprisonment, at the discretion of the court.

Timber for
props.

§ 16. The owner, agent or operator of any coal mine shall keep a sufficient supply of timber, where required to be used as props, so that the workmen may at all times be able to properly secure the said workings from caving in; and it shall be the duty of the owner, agent or operator to send down all such props when required.

§ 17. All acts or parts of acts inconsistent with the provisions of this act are and the same are hereby repealed.

§ 18. That all mines hoisting coal by steam power from shaft or slope, having no other means of ingress or egress afforded to persons employed therein than by said shaft or slope, shall, within ninety days after July the first, A. D. 1883, have all engine and boiler-houses roofed and sided with fire-proof materials, and they shall be situated not less than fifty feet from the mouth of the said shaft or slope; that the hoisting derricks erected over said hoisting shaft or near said slope, if inclosed, and all

the coal chutes, buildings and constructions within a radius of fifty feet of the mouth of said hoisting shaft or slope, shall be covered and sided with fire-proof materials, and the person in charge, the owners or operators thereof, shall provide a steam pump and have the same conveniently situated, and a sufficient supply of water and hose always ready for use in any part of the buildings, chutes or constructions within a radius of fifty feet of said coal-hoisting shaft or slope; and if the person in charge of any such coal shaft or slope shall refuse or neglect to comply with the provisions of this act, then the inspector of coal mines for the county in which the said shafts or slope are situated shall proceed, through the State's attorney of his county, or any attorney, in case of his refusal to act, acting in the name and on behalf of the State, against the owner, agent or operator of said shaft or slope, by information without bond, after giving at least two days' notice to such owner, agent or operator; and the said owner, agent or operator shall have the right to appear before the judge or master to whom the application is made, who shall hear the same on affidavits, and such other testimony as may be offered in support as well as in opposition thereto: and if it be found that the owner, agent or operator of said shaft or slope has refused or neglected to comply with the provisions of this act, the court, or judge in vacation, by order, shall prohibit the further working of any such coal shaft or slope until the owner, agent or operator shall have complied with the terms of this act. [An act approved June 21, 1883; in force July 1, 1883.]

§ 19. That all miners and employes engaged in mining coal shall use copper needles in preparing blasts in coal and not less than five (5) inches of copper on the end of all iron bars used for tamping blasts of powder in coal, and the use of iron needles and iron tamping bars not tipped with five inches of copper is hereby declared to be unlawful. Any failure on the part of a coal miner or an employé in any coal mine to conform to the terms and requirements of this act shall subject such miner or employé to a fine of not less than five dollars, nor more than twenty-five dollars, with costs of prosecution, for each offense, to be recovered by civil suit, before any justice of the peace; said fines, when collected, to be paid into the treasury of the county where the offense was committed, to the credit of the fund provided for the payment of the county inspector of mines. [An act approved June 21, 1883; in force July 1, 1883.]

Buildings to be rendered fire proof where there is no escape-ment shaft or other place of egress.

Miners must use copper needles, and copper tips on tamping bars.

AN ACT

TO PROVIDE FOR THE WEIGHING OF COAL AT THE MINES.

*Approved June 14, 1883; in force July 1, 1883.*Scales to be
provided at
mine.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly, : That the owner, agent or operator of each and every coal mine or colliery in this State shall furnish, or cause to be furnished and placed upon the switch or railroad track adjacent to said coal mine or colliery, a track scale of standard manufacture, and shall weigh all coal hoisted from said mine or colliery before or at the time of being loaded on cars, wagons, or other vehicle of transportation: Provided, that in cases where track scales cannot be used, or the product of such mine or colliery will not justify the expense of a track scale, the owner, agent or operator of same shall be permitted to furnish (in lieu of a track scale) a platform scale of sufficient capacity to weigh each box as it is hoisted from such mine or colliery.*

All coal to be
weighed and
weighman to
be sworn.

§ 2. *All coal produced in this State shall be weighed on the scales as above provided, and a correct record kept of the same in a well bound book furnished by the owner, agent or operator of such mine for that purpose, by a competent person at the expense of such owner, agent or operator, said record to be subject to the inspection (at all reasonable business hours) of the miner, operator, carrier, land owner, adjacent land owner, members of the Bureau of Labor Statistics, mine inspectors, and all others interested. The party weighing the coal and keeping such record shall be required, before entering upon his duties, to make and subscribe to an affidavit before some magistrate or other officer authorized to administer oaths under the statute, to accurately weigh and faithfully keep a true record of all coal hoisted from such shaft; such affidavit to be placed on file with the mine inspector of his county or district, and any one knowingly or willfully disregarding such oath or affidavit, shall be regarded as a perjurer and punished accordingly.*

§ 3. *It shall be lawful for the miners employed in any coal mine or colliery in this State to furnish a check-weigher at their own expense, whose duty it shall be to balance said scales and see that the coal is properly weighed, and keep a correct account of same, and for this purpose he shall have access at all times to the beam*

box of said scale while such weighing is being performed. That the agent employed by persons mining coal to act as such check-weigher shall be a citizen of the State and county wherein the mine is situated, and shall, *before entering upon his duties, make and subscribe to an affidavit same as set forth in section 2 of this act, and shall be subject to the same penalty.* He shall, on application to the owner, agent or operator of the mine producing the coal to be weighed, be furnished with a written permit that shall entitle him to enter and remain in the room or place where the accounting by him of the weights of coal is to be done, and the said permit shall not be transferable.

(check-weighman may be employed and must be sworn.

§ 4. Any person, owner or agent operating a coal mine or colliery in this State who shall fail to comply with the provisions of this act, or any person who shall obstruct or hinder the carrying out of its requirements, shall be *finned for the first offense not less than fifty dollars (\$50); for the second offense, not less than two hundred dollars (\$200), and for the third offense, not less than five hundred dollars (\$500), or be imprisoned in the county jail not less than six months: Provided, That the provisions of this act shall apply only to coal mines doing business on and shipping coal by railroad or water.*

Penalties under the weighing act.

§ 5. *That all contracts for the mining of coal, in which the weighing of the coal as provided for in this act shall be dispensed with, shall be null and void.* [As amended by an act approved June 29, 1885, and in force July 1, 1885.]

Contracts with miners.

AN ACT

TO REVISE THE LAW IN RELATION TO MINES.

Approved March 24, 1874. In force July 1, 1874.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly: Whenever any mine or mining place shall be so situated that it cannot be conveniently worked without a road or railroad thereto, or ditch to drain the same or to convey water thereto, and such road, railroad or ditch shall necessarily pass over, through or under other land owned or occupied by others, the owner or operator of any such mine or mining place may enter upon such lands, and construct such road, railroad or ditch, upon complying with the law in relation to the exercise of the right of eminent domain; and the commissioners of highways of any county under township organization, and the county board in counties*

An operator's right to construct roads across another's land.

May also construct tramways along public or private roads by permission of commissioners.

not under township organization, may, when the public good requires, cause to be laid out and opened public highways, or private roads or cartways, as the public good may require, in the same way as now is or may hereafter be provided by law for the laying out and opening of public highways or private roads or cartways, and may permit the owner, lessee or operator of any coal mine to lay down and operate a horse or dummy railway thereon, or upon any highway or private road or cartway now or hereafter laid out and opened for public or public and private use, but always in such a manner and way, and upon such place thereon, as to not unnecessarily interfere with ordinary public travel.

AN ACT

TO AMEND CHAPTER XXX OF THE REVISED STATUTES (1845),
ENTITLED "CRIMINAL JURISPRUDENCE."

Approved February 13, 1863; in force February 13, 1863.

Intimidation
of employes.

SECTION 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly,* If any person shall, by threat, intimidation, or otherwise, seek to prevent any other person from working at any lawful business on any terms that he may see fit, such person so offending shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be fined in any sum not exceeding one hundred dollars.

Conspiracy
against operators.

§ 2. If any two or more persons shall combine for the purpose of depriving the owner or possessor of property of its lawful use and management, or of preventing by threats, suggestions of danger, or other means, any person or persons from being employed by such owner or possessor of property, on such terms as the parties concerned may agree upon, such person so offending shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be fined in any sum not exceeding five hundred dollars, or imprisoned in the county jail not exceeding six months.

Trespass.

§ 3. If any person shall enter the coal banks of another without the expressed or implied consent of the owner or manager thereof, after notice that such entry is prohibited, such person shall, on conviction thereof, be fined, in the discretion of the court, in any sum not exceeding five hundred dollars, or imprisoned in the county jail not more than six months.

§ 4. If any person shall enter the coal banks of another with intent to commit any injury thereto, or by means of threats, intimidations, or other riotous or unlawful proceedings, to cause or induce any person employed therein to leave his employment, such person shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be subject to a fine not exceeding five hundred dollars, or imprisoned in the county jail not exceeding six months, or both. Injury to
property.

§ 5. This act to take effect and be in force from and after its passage.

